TREATISE

ONTHE

THEORY and PRACTICE

MIDWIFERY.

BY W. SMELLIE, M. D.

A NEW EDITION.

SET OF ANATOMICAL TABLES,

EXHIBITING

The VARIOUS CASES that occur in PRACTICES.

Accurately engraven on

FORTY COPPERPLATES:

WITH EXPLANATIONS.

IN THREE VOLUMES.

VOL. I.

Printed for C. ELLIOT, Parliament-Square,

RELAT 136,195 The Mass, Med See. Dec. 26. 1872 Morring affine on A PLICATE CONTRACTOR OF THE The Latitude College, and the second of the Marker Line of Abreni A CONTRACTOR

TO THE

STUDENTS OF MIDWIFERY,

AND OF THE OTHER

BRANCHES OF MEDICINE.

IN THE

UNIVERSITY OF EDINBURGH:

THIS NEW AND CORRECTED EDITION

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DR SMELLIE'S TREATISE

ON THE

THEORY AND PRACTICE OF MIDWIFERY,

With his SET of

ANATOMICAL TABLES.

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WITH THE GREATEST RESPECT,

INSCRIBED.

BY THEIR VERY HUMBLE SERVANT,

EDIN. Nov. 2

THE EDITOR

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PREFACE.

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I AT first intended to have published this Treatise in different lectures, as they were delivered in one course of Midwisery; but I found that method would not answer so well, in a work of this kind, as in teaching: because, in the course of my lectures, almost every observation has a reference to the working of those machines which I have contrived to resemble and represent real women and children; and on which all the kinds of different labours are demonstrated, and even performed, by every individual student.

I have, therefore, divided the whole into an Introduction and four Books, distinguished by Chapters, Sections, and Numbers; and have industriously avoided all theory, except so much as may serve to whet the genius of young practitioners, and be as hints to introduce more valuable discoveries in the art.

The Introduction contains a summary account of the practice of midwifery, both among the ancients and moderns, with the improvements which have been hitherto made in it; and this I have exhibited for the infor-

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mation of those who have not had time or opportunity to peruse the books from which it is collected; that, by feeing at once the whole extent of the art, they may be the more able to judge for themselves, and regulate their practice by those authors who have written most judiciously upon the subject. The knowledge of these things will also help to raise a laudable spirit of emulation, that never fails to promote useful inquiries, which often redound to the honour of art, as well as to the advantage of fociety.

Though I have endeavoured to treat every thing in the most distinct and concise manner, perhaps many directions that occur in the third book may be thought too minute and trivial by those who have already had the advantage of an extensive practice; but the work being principally undertaken with a view to refresh the memory of those who have attended me, and for the inftruction of young practitioners in general, I thought it was necessary to mention every thing that might be useful in the course of practice.

At first, my design was to have inserted cases, by way of illustration, according to the method of La Motte; but, upon further deliberation, I thought fuch a plan would too much embarrass the student in the progress of his reading: and therefore I have, in imieniteer.

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tation of Mauriceau, published a second volume of histories, digested into a certain number of classes or collections, with proper references to the particular parts of this treatise; so that the reader, when he wants to see the illustration, may turn over to it at his leisure, according to the directions in this edition.

Those classes consist of the most useful cases and observations, partly culled from the most approved authors, but chiefly collected from my own practice, and that of my correspondents and former pupils, by whom I have been consulted.

Nor will the reader, I hope, imagine that fuch a fund will be infufficient for the purpose, or that this treatise is cooked up in a hurry, when I inform him, that above fix years ago I began to commit my lectures to paper for publication: and from that period have from time to time altered, amended, and digested what I had written, according to the new lights I received from study and experience. Neither did I pretend to teach Midwifery till after I had practifed it fuccefsfully for a long time in the country; and the observations I now publish are the fruits not only of that opportunity, but more immediately of my practice in London during ten years, in which I have given upwards of two

bun-

hundred and eighty courses of Midwisery, for the instruction of more than nine hundred pupils, exclusive of semale students: and in that series of courses one thousand one hundred and sifty poor women have been delivered in presence of those who attended me; and supported during their lying-in by the stated collections of my pupils; over and above those difficult cases to which we are often called by midwives, for relief of the indigent.

These considerations, together with that of my own private practice, which hath been pretty extensive, will, I hope, screen me from the imputation of arrogance with regard to the task I have undertaken; and I flatter my-felf that the performance will not be unser-

viceable to mankind.

- Till 1

It was my intention to infert in this Compendium plates of the most useful instruments appertaining to the art of Midwisery; but as large drawings could not be properly bound in a book of so small a size, I have exhibited them in a large solio, with thirty-six anatomical tables and explanations; and in this edition I have made proper references to these sigures.

energial and a fall and the fall

general environment	na un un a m	
o o	NTENTS	Los
THE INT	RODUCTION,	Page 1
£ 2	BOOK I.	1927
	CHAP. I.	
7 - 1 7 S. C. C. Miller (1972) S. C.	e and Form of the PELVIS, so cessary to be known in the Prasti y.	
SECT. I. Of	the bones,	49
SECT. II.		51
SECT. III.	00 3:0 - 3:1:	53
SECT. IV.	Of a distorted pelvis, -	56
DECI.		30
41134 13341	CHAP. II.	K. M.
	nal and Internal PARTS of GENTION proper to Women,	NE-
SECT. I. Th	be external parts and vagina,	63
SECT. II. O	f the uterus,	66
	Of the ovaria, vessels, ligame	nts,
and Fallopi	an tubes,	72.
cup the	CHAP. III.	No. 19 may 1, 10 m Mar
	the catamenia and fluor albus in	
 27 U.S. PARIS S. N. S. S.	ated flate;	73
	Of the increase of the uterus as	77
conception,		82
SECT. IV.	of the magnitude, weight, and	
ferent appe	llations given to the ovum and chi	
SECT. V. O	ftwins,	85

SECT. VI. Of superfectation, 86 SECT. VII. Of abortions, 87 SECT. VIII. Of false conceptions and moles, 89 SECT. IX. Of the placenta, 93
воок п.
CHAP. II.
Of the Diseases incident to pregnant Women, being either such as immediately proceed from Pregnancy, or such as may happen at any other Time; and if not carefully prevented or removed, may be of dangerous Consequence both to Mother and Child. Sect. I. Of nausea and vomiting, 100 Sect. II. Of difficulty in making water, costiveness, swelling of the hamorrhoids, legs,
and labin pudendi, and the dyspnea and vomiting at the latter end of pregnancy, 102
CHAP. II.
Of the DISEASES incident to pregnant Women.
SECT. I. Of the flone in the kidneys and blad-
der, 108
SECT. II. Of hernias or ruptures, - 110
SECT. III. Of dropfies, - 112
SECT. IV. Of incontinence of urine, and dif-
ficulty in making water at the latter end of
pregnancy and in time of labour, - 113
SECT. V. Of the fluor albus in pregnant
SECT. VI. Of the generalwa and lues ve-
nereas - 116
CHAP.

C	ONTENTS.	\$i
Andrew Control		Page
The same of the sa	CHAP. III.	March
	Of MISCARRIAGES.	N 120 EN
SECT. I. Of	the child's death,	718
SECT. II. O	the separation of the placen	ta
from the ute		119
	coughs, vomitings, &c.	124
SECT. IV. Of	longings,	1
В	OOK III.	Nead
	CHAP. I.	mar.
SECT. I. Of th	e child's situation in the uterus,	125
SECT. II. Of	touching, A	129
	f the signs of conception, and t	
THE REST LESS OF THE PROPERTY	ign of pregnant and obstruct	ed
women,	to sail is talk that at a	133
A THE REPORT OF THE PROPERTY O	ow to distinguish the false labor	BOOLEVEL CO.
CLUTIC SCHOOLSCHOOLSCHOOLSCHOOLSCHOOLSCHOOL	ue, and the means to be used	ACT THE PROPERTY OF
Secr V Th	division of labours,	136
DEC. 4. 10		138
	CHAP. II.	
	NATURAL LABOURS.	的政教
SECT. I. Of the	be different positions of women	in 142
SECT. II. Of	the management of women in	\$60031000000E
natural labo		147
- Marie Marie Co. St. Print, D. College, V. C. C. College, M. C. C	natural labours when lingering,	(02110350
	v and when to break the men	SECTION ASSESSMENT
branes,	10.1	ib
Tyumb. 11. Wh	en little or no waters are pr	-

truded,

Numb. III. How to manage when the head comes into the pelvis, 155 Numb

153

		Page
	How to affift in lingering labours	
	parts are rigid,	157
Numb. V.	How to behave when the birth is ob	
Aructed	by the navel-string, or Shoulders of	f
the child,	or a narrow pelvis,	158
SECT. IV.		162
Numb. I.	How to manage the child efter de	-
livery,		ib
Numb. II.		163
	. How to tie the funis umbilicalis,	164
SECT. V.	Of delivering the placenta,	167
	CHAP. III.	
and the lates	of Laborious Labours.	Size
SECT. I.	How laborious labours are occasioned	172
		178
	General rules for using the forceps,	188
「中央大学を支援を定する」との特別の中	. The different ways of using the for	EXPERIENCE OF THE PROPERTY.
ceps,	图	192
Numb. I.	When the head is down to the os ex	consi.
ternum,	CHARLY AND THE	ib
	When the forehead is to the on pubis,	197
Numb. III.	When it presents fair at the brin	n.
of the per	lvis,	198
Numb. IV.	When the face presents, -	201
Numb. V.		204
SECT. V.	When and how to use the crotchet,	211
Numb. I.	The figns of a dead child, -	ib
Numb. II.	When the crotchet is to be used,	213
SECT. VI.	The old method of extracting th	
bead,		ib
SECT. VI	. The method of extrasting with th	e .
- Sciffars	blunt book, and crotchet, -	215
Numb. I.	Of the woman's posture;	ib
	Nu	mb.

Numb. II. Of the scissars, 126 Numb. III. Of the hydrocephalus, - 218 Numb. IV. When the pelvis is narrow, ib CHAP. IV. Of PRETERNATURAL LABOURS. SECT. II. The first class of preternatural labours. When the feet, breech, or lower parts of the sætus present, and the head, sboulders, and upper parts, are towards the fundus, 225 SECT. III. The second class of preternatural labours, - 238 Numb. I. Numb. II. Numb. III. 238—240 SECT. IV. The third class of preternatural
Numb. II. Of the scissars, - 218 Numb. III. Of the hydrocephalus, - 218 Numb. IV. When the pelvis is narrow, ib CHAP. IV. Of PRETERNATURAL LABOURS. SECT. II. The first class of preternatural labours. When the feet, breech, or lower parts of the sætus present, and the head, shoulders, and upper parts, are towards the fundus, 225 SECT. III. The second class of preternatural labours, - 238 Numb. I. Numb. II. Numb. III. 238—240
Numb. III. Of the hydrocephalus, 218 Numb. IV. When the pelvis is narrow, ib CHAP. IV. Of PRETERNATURAL LABOURS. SECT. II. The first class of preternatural labours. When the feet, breech, or lower parts of the sætus present, and the head, shoulders, and upper parts, are towards the fundus, 225 SECT. III. The second class of preternatural labours, 238 Numb. I. Numb. II. Numb. III. 238—240
Numb. IV. When the pelvis is narrow, ib CHAP. IV. Of PRETERNATURAL LABOURS. SECT. II. The first class of preternatural labours. When the feet, breech, or lower parts of the sætus present, and the head, shoulders, and upper parts, are towards the fundus, 225 SECT. III. The second class of preternatural labours, 238 Numb. I. Numb. II. Numb. III. 238—240
CHAP. IV. Of PRETERNATURAL LABOURS. SECT. II. — 212 SECT. II. The first class of preternatural labours. When the feet, breech, or lower parts of the sætus present, and the head, shoulders, and upper parts, are towards the fundus, 225 SECT. III. The second class of preternatural labours, 238 Numb. I. Numb. II. Numb. III. 238—240
Of PRETERNATURAL LABOURS. SECT. II. The first class of preternatural labours. When the feet, breech, or lower parts of the sætus present, and the head, shoulders, and upper parts, are towards the fundus, 225 SECT. III. The second class of preternatural labours, 238—248 Numb. I. Numb. III. Numb. III. 238—249
SECT. II. The first class of preternatural labours. When the feet, breech, or lower parts of the sætus present, and the head, shoulders, and upper parts, are towards the fundus, 225 SECT. III. The second class of preternatural labours, 238 Numb. I. Numb. II. Numb. III. 238—240
SECT. II. The first class of preternatural labours. When the feet, breech, or lower parts of the sætus present, and the head, shoulders, and upper parts, are towards the fundus, 225 SECT. III. The second class of preternatural labours, 238 Numb. I. Numb. II. Numb. III. 238—240
SECT. II. The first class of preternatural labours. When the feet, breech, or lower parts of the sætus present, and the head, shoulders, and upper parts, are towards the fundus, 225 SECT. III. The second class of preternatural labours, - 238 Numb. I. Numb. III. Numb. III. 238—240
bours. When the feet, breech, or lower parts of the fætus present, and the head, shoulders, and upper parts, are towards the fundus, 225 SECT. III. The second class of preternatural labours, - 238 Numb. I. Numb. III. 238—240
of the fætus present, and the head, shoulders, and upper parts, are towards the fundus, 225 Sect. III. The second class of preternatural labours, - 238 Numb. I. Numb. III. Numb. III. 238—240
and upper parts, are towards the fundus, 225 SECT. III. The second class of preternatural labours, - 238 Numb. I. Numb. II. Numb. III. 238—240
SECT. III. The second class of preternatural labours, - 238 Numb. I. Numb. II. Numb. III. 238—240
labours, - 238 Numb. I. Numb. III. Numb. III. 238-240
Numb. I. Numb. II. Numb. III. 238-240
2. 7. 生。7. 无,这一次,这个是有关的方面,我们就是国际了。这种特殊的特别的特殊的特殊的。
SECT. IV. The third class of preternatural
나 가는 이 사람들이 집에 가는 아니는 아니까 나는 아니는 아니는 아니는 아니는 아니는 아니는 아니는 아니는 아니는 아니
! labours, - 245
Numb. I. Numb. II. Numb. III. Numb. IV.
Numb. V 250-259
SECT. V. 264
Numb. I. Numb. II 264, 267
CHAPATA
of Twins.
SECT. I 272
SECT. II. Of monsters, 275.
SECT. III. Of the Cafarian operation, 277
et a re-late midden dam gelingt Contingential.
B O O K IV.
CHAP CHAP COL
Of the MANAGEMENT of Women from the Time
of their Delivery to the End of the Month,
with the feveral DISEASES to which they are
Subject during that Period.
SECT. Is Of the external application, 281
Numb. I. Numb. II. Numb. III. 283-286
SECT.

	U + + + +		
			Page
SECT. II. O	f air, diet, flee	ping and	watch
	and reft, retent		
and the pass	Tions of the mind	AN CAME	288
SECT. III. O	f violent flooding	ngs,	- 293
	f the after-pain.		296
SECT. V. Of	the lochia,		- 298
SECT. VI. C	of the milk-fever	4.6	360
SECT. VII.	Of the prolapsi	us vagina	
et uteri,			307
2007 CONTROL OF THE PROPERTY OF THE PROPERT	Of the evacua	tions necel	
	he month after		311
	CHAP.		
Of the MANA	GEMENT of n	ew-born C	bildren.
	EASES to which		
SECT. I. Of	washing and dre	Jing the ch	bild, 312
SECT. II. Ho	w to manage wh	en any of t	he com-
mon paffage	s are locked up,	or the tong	e tied, 315
	mould-shot head		
excoriations		, i P. daugin	318
SECT. IV. O	f the aptha,	1.0 . 3	- 322
SECT. V. Of			324
	CHAP.	m.	est street
Of the requisit	e Qualification	of Accou	cheurs.
	Nurses who at		
	et and dry Nur		
SECT. I. Oft	he accoucheur,	10.	325
SECT. II. Of	the midwife,	NEW TRANS	326
SECT. III. O	f nurses in gene	ral,	- 328
	mb. H. Numb.		328-330
	L TABLES, a	REPLEASE AND A STATE OF THE STATE OF	Section of Statement Colors
10g TTT	Carrier in Labor	17.5 0119.50	332-400
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INTRODUCTION.

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I T must be a satisfaction to those who begin the study of any art or science, to be made acquainted with the rise and progress of it; and therefore I shall, by way of Introduction, give a short detail of the practice of Midwisery, with the improvements which have been made in it at different times, as I have been able to collect the circumstances, from those authors, ancient as well as modern, who have written on the subject.

By these accounts it seems probable, that in the first ages the practice of this art was altogether in the hands of women, and that men were never employed but in the utmost extremity: indeed it is natural to suppose, that while the simplicity of the early ages remained, women would have recourse to none but persons of their own sex in diseases peculiar to it; accordingly, we find that in Egypt Midwisery was practiced

by women.

Hyginus relates, that in Athens a law was made, prohibiting women and flaves from practifing physic in any shape: but the missaken modesty of the sex rendered it afterwards absolutely necessary to allow free women the privilege of sharing the art with the men.

In the Harmonia Gynaciarum, there are extant feveral directions and recipes on the subject of Midwifexy, collected from the writings of one Gleopatra, interspersed.

terspersed with those of Moschion and Priscian; and some people imagine this was no other than the famous Cleopatra queen of Egypt, because in the pre-

face Arfinoe is mentioned as the author's fifter.

Galen, who lived two hundred years after this Egyptian queen, advises the reader to consult the writings of one of that name, but does not inform us whether she was or was not that celebrated princess; so that in all probability it was some other person of the fame name, as the study and exercise of such an art was not at all fuited to the disposition of such a gay voluptuary as queen Cleopatra is described to have Been.

Ætius transcribes some chapters from the works of one Aspasia, touching the method of delivering and managing women in natural labours; but gives no account of the place of her refidence, nor of the time in which she wrote, Several other female practitioners are mentioned by different historians; but as none of their writings are extant, and the accounts given of them are mostly fabulous and foreign to our purpose, I shall forbear to mention them in this place; and referring the curious to Le Clerc's History of Physic, begin with Hippocrates, the most ancient writer now extant upon our subject, who may be styled the father of Midwifery as well as medicine; because all the fucceeding authors, as far down as the latter end of the fixteenth century, have copied from his works the most material things relating to the diseases of women and children, as well as to the obstetric art. I shall therefore give a fuccinct account of his practice; and in my detail of the other authors, only observe the improvements they have made, and the circumstances in which they have deviated from his method and opinion.

Hippocrates, who practifed medicine in Greece about 460 years before the Christian æra, no doubt availed himself of the observations of those who went before him in the exercise of the same profession. He acquired the highest reputation by his wife predictions and successful practice, and, by his uncommon sagacity and

experience, greatly improved the healing art.

In his book De Natura Muliebri, and those De Mui lierusa

lierum Morbis, he mentions and describes many diseases peculiar to the female fex, according to the theory of those times; and prescribes more medicines for the difeases of women than for any other distempers.

Many of his remedies, indeed, are very ftrange and uncouth; but a number of them are still accounted excellent in the present practice, unless his names of them have been mistaken, and misapplied to other medicines: and although his theory is frequently odd and erroneous, his diagnoftics, prognoftics, and method of cure, are often just and judicious.

In suppressions of the menses, he first of all orders vomits and purges, then sharp pessaries in form of suppositories, composed of lint or wool, with divers kinds of deobstruent powders, wax and oil, to be introduced into the vagina: he likewife prescribes fumigations, fomentations, and hot baths, together with internal medicines. He observes, that such obstructions produce a pain and feeming weight in the lower part of the abdomen, extending to the loins and ilia, attended with a vomiting at intervals, and longings like those of a pregnant woman. If these symptoms of pain and weight affect the hypochondria, producing fuffocation and pain in the head and neck, the patient is to be relieved by the application of fetid things to the nofe, with caftor and fleabane given internally in voice the interest which were the life or wine, &c.

When the menses flow in too great a quantity, he proposes a contrary method: he advises her to abstain from bathing and all laxative and diuretic things; orders aftringent peffaries for the vagina, and cold applications to the lower parts; prescribes internally several kinds of aftringent medicines, with the peplium or poppy-feed, and cupping-glasses to be applied to the breafts. When the violence of this discharge is abated, he proposes purges and vomits, then affes milk and a nourishing diet, and various kinds of internal and ex-

ternal medicines.

In a fluor albus, he fays the urine is like that of an ass; the patient labours under a pain in the lower part of the abdomen, loins, and ilia, together with a swell-

ing

ing in the hands and legs; her eyes water, her complexion becomes wan and yellow, and in walking the is oppressed with a difficulty of breathing: in this case he prescribes emetics and cathartics, asses milk, whey, fomentations, and different kinds of medicines, to de-

terge and strengthen the parts affected.

He mentions many complaints which, in his opinion, proceed from different motions and fituations of the uterus, and proposes a good many medicines for the cure. As to his theory of conception, and his opinions about the birth in the seventh or eighth month of gestation, they were actually espoused by all medi-

cal writers till the last century.

In his first book of the diseases of women, he treats of difficult labours; observing, that if a woman is at her full time feized with labour-pains, and cannot after a long time be delivered, the child either lies across, or presents with the feet; for when the head presents the case is favourable: whereas if the child lies across, a difficult labour enfues. This affertion he illustrates by the example of an olive in a narrow-mouthed jar, which cannot be fo eafily extracted by the middle as when it presents with one end. He likewise fays, that the birth will be difficult when the feet prefent; in which case either mother or child, or both (for the most part) perish: nor is the birth without difficulty when the fœtus is dead, apoplectic, or double. then proceeds to direct us how to relieve the woman of several complaints to which she may be subject after delivery: he describes the method of excluding the fætus, and of affifting in difficult labours; if the child presents fair, and is not easily delivered, he orders sternutatories to be administered, and the patient to stop her mouth and nose, that they may operate the more effectually: the must also be thaken in this manner; let her be fastened to the bed by a broad band croffing her breaft, her legs being bended to the lower part of the bed, the other end of which must be elevated by two affistants, who gently shake her by intervals, until her pains expel the child: the parts must be anointed with fome unctuous medicine, and cautiously separated;

rated; and care must be taken that the placenta immediately follow the child. If the feetus lie across, presenting to the os uteri, whether it be alive or dead, he orders it to be pushed back and turned, so as that it may present with the head in the natural position; and in order to effect this purpole, the woman must be laid supine on a bed, with her hips raised higher than her head. If the child is alive, and presents with the arm or leg, he advises us to return them as foon as possible, and bring down the head, or if it lie across presenting with the fide or hip, the same methods must be used; then the woman may be refreshed by fitting over the steams of hot water. The child is to be managed in the same manner when it is dead, and prefents with leg or arm, or both; but if the feetus cannot be conveniently delivered on account of the body's being swollen, he directs us to bring it away piece-meal, in the following manner: If the head prefents, let it be opened with a small knife; and the bones of the skull being broken, must be extracted with a pair of forceps, for fear of hurting the woman; or by an embryulcus, firmly fixed on the clavicles, it may be extracted by little and little. After the head is delivered in this manner, should the child stick at the shoulders, he directs us to divide the arms at the articulations; and they being brought away, the reft of the body generally follows with eafe: but if it will not yet give way, the whole breaft must be divided, and great care taken that no part of the intestines be denudated or wounded, left the guts, or their contents, falling out, should retard the operation; then the ribs being broken, and the scapulæ extracted, the rest of the foctus will easily follow, unless the abdomen is fwollen; in which case the belly must be punctured, and on the exit of the flatus, the child will be brought along. If part of the child is already delivered, and the rest will not follow, nor can that which is out be returned, he orders the operator to take away as much as he can of it, and pushing up the remainder, turn the head downwards: but, previous to this operation, he advices him to pare his nails, and to use a crooked knife, the point and

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a-1; back of which must be covered with the fore-finger at its introduction, lest it should hurt the uterus.

In his book De Superfetatione, he directs us, when the child's head appears without the os uteri, and the rest of the body does not follow, the fætus being dead, to wet our fingers with water, and introducing them between the os uteri and head, put one into the mouth, and laying hold of it bring it along. When the body is delivered, and the head remains behind (in those cases when the child comes by the feet), he advifes the operator to dip both his hands in water, and introducing them between the os uteri and head of the child, grasp this last with the fingers, and extract it. If the head is in the vagina, it may be delivered in the fame manner. When the child remains dead in the uterus, and cannot be delivered either by the force of nature or medicines, he directs us to introduce the hand, anointed with some unctuous cerate; and dividing the parts with an unguis fixed on the great finger, bring the fœtus along, as before.

In the first book of the Diseases of Women, he gives directions for excluding the secundines, provided they are not expelled in the natural way. He says, if the secundines come not away immediately after the birth, the woman labours under a pain in her belly and side, attended with rigors and a sever, which vanish when they are discharged; though for the most part the after-birth putrises and comes away about the fixth or seventh day, and sometimes later. In this case, he orders the patient to hold her breath; and prescribes internally, mugwort, Cretan dittany, slowers of white violets, leaves of agnus castus, with garlic boiled or roasted, small onions, castor, spikenard, rue,

and black wine.

In the book De Superfatatione, after having described the methods of delivering a dead child, he says, if the secundines come not away casily, the child must be left hanging to them, and the woman seated on a high stool, that the secund by its weight may pull them along; and lest this should be too suddenly effected, the child may be laid on wool newly plucked, or on

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two bladders filled with water, and covered with wool, which being pricked, as the water evacuates they will fubfide, and the child finking gradually, will gently draw the fecundines away; but should the navel-string happen to be broken, proper weights must be tied to it, in order to answer the same purpose; these being the easiest and least hurtful methods of extracting the placenta.

He afterwards observes, that if the woman has had a difficult labour, and could not be delivered without the help of machines, the child is generally weak, and therefore the navel-string ought not to be divided until it shall have either urined, sneezed, or cried aloud; in the mean time, it must be kept very near the mother: for though the child does not seem to breathe at first, nor to give any other signs of life, the navel-string, by remaining uncut, may be in a little time in-

flated, and the life of the infant faved.

With regard to the lochia or menses after delivery. he takes notice, that if they are altogether suppressed, or the discharge insufficient, and the uterus is indurated, the patient is afflicted with pains in the loins, groins, fides, thighs, and feet, together with an acute fever, accompanied with horrors. When the pains happen unattended with a fever, he orders bathing, and the head to be anointed with oil of dill; and a decoction of mallows, with oil of Cyprus, to be applied externally, in order to affuage the pain. He fays, in all diforders where fomentations are necessary, the parts ought afterwards to be anointed with oil; but when there is a fever in the case, bathing must be avoided, warm fomentations used, the uterine medicines prescribed in draughts, and garlic, castor, or rue boiled with oatmeal: he likewise observes, that if the uterus is inflamed after delivery, the patient is in imminent danger of her life unless a stool can be procured, or the ymptom removed by bleeding. He likewise ascribes feveral complaints and diforders of women to the different positions and motions of the uterus; of which last, Plato, who lived immediately after Hippocrates, gives a very odd and romantic description in his Timeus.

mens. After affirming that there is implanted in the genitals of man an imperious, headstrong, inobedient power, that endeavours to subject every thing to its furious lusts; he fays, the vulva and matrix of women is also an animal ravenous after generation, which being baulked of its desire for any length of time, is so enraged at the disappointment and delay, that it wanders up and down through the body, obstructing the circulation, stopping the breath, producing suffoca-

tions, and all manner of diseases.

Although we have a piece in English called Arifiotle's Midwifery, I find little or nothing of the practice in his works: he hath written on the generation
of animals; and we find in him feveral hints curious
enough, even upon our subject: he tells us, that women suffer more than other animals from uterine gestation and labour; that those women who take
most exercise, endure both with the greatest ease and
safety; and that the fectus in all animals naturally comes
by the head, because there being more matter above
than below the navel, the head necessarily tilts downwards. For this reason, he says, every birth in which
the head presents is natural, and those unnatural in
which the feet or any other part of the body come
foremost.

We have nothing written on the subject of midwifety from his time to that of Celfus, who is supposed to have lived in the reign of the emperor Tiberius. This author hath given us a chapter on the delivery of dead children and the placenta, in which he hath copied from Hippocrates; though he is more full than his mafter, and mentions several improvements on his practice. After having given directions with regard to the woman's position, he advises the operator to introduce one finger after another, until the whole hand shall gain admittance: he fays, that the largeness of the uterus, and the strength and courage of the patient, are great advantages to the birth; that the woman's abdomen and extremities must be kept as warm as posfible; that we must not wait until an inflammation is produced, but affift her without delay; because, should het t

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her body be fwelled, we can neither introduce our hands, por deliver the child, without great difficulty; and vomitings, tremors, and convultions, often enfue. When the crotchet is fixed upon the head, he directs us to pull with caution, left the instrument should give way, and lacerate the mouth of the womb; by which means the woman would be thrown into convultions, and imminent danger of her life. When the feet prefent, he fays, the child is eafily delivered, by laying hold on them with the hands, and fo bringing them along. If the fœtus lie acrofs, and cannot be brought down, he orders the crotchet to be fixed on the armpit, and drawn along by little and little; by these endeavours the neck will be almost doubled, and the head bent backwards; in which case this last must be separated from the body, and the whole extracted piecemeal. The operation, he fays, must be performed with a crotchet, the internal furface of which is edged, and the head be brought away before the body; because, if the greatest part be extracted first, and the head left alone in the uterus, the case will be attended with great difficulty and danger. Nevertheless, should this misfortune happen, he directs a double cloth to be laid on the woman's belly, and a skilful affistant to stand at her left-fide, and with both hands on the abdomen to press from fide to fide, with a view of forcing the head against the os uteri; which being effected, it must be delivered by fixing the crotchet in the skull. With regard to the placenta, he directs us to deliver it in this manner: The child being delivered, must be given to a fervant, who holds it on the palms of his hands, while the operator gently pulls the umbilical cord for fear of breaking it, and tracing it with his right-hand as far as the secundines, separates the placenta from the uterus with his fingers, and extracts it entire, together with the grumous blood: then the woman's thighs being placed close together, she must be kept in a moderately warm room, free from wind, and a cloth dipped in oxyrrhodon must be laid on her abdomen: the rest of the cure consisting in the application of those things which are used in inflammations and wounds of the tendons.

Moschion, who is supposed to have lived at Rome in the reign of Nero, says, that in difficult births the parts are first of all to be relaxed with oil: if the pasfage of the urine is obstructed by a stone in the neck of the bladder, he advises us to draw off the water with a catheter; if the fæces are indurated, he prescribes a glyfter, and orders the membranes to be pierced with a lancet. He favs the best position is that of the head prefenting, the hands and feet being mingled and difposed along the fides. If the position is not right, and cannot be amended by putting the woman in proper postures, he advises us to introduce the hand when the os uteri is opened, and turn the child. If a foot prefents (fays he) push it back, and bring the fœtus by both feet, the arms being pressed down along the sides: if the knee or hip presents, they must be also pushed back, and the child brought by the feet: if the back presents, introduce the hand, and alter the position by turning to the feet or to the head, if it be nearest; and if the head is large it must be opened, &c.

Rufus Ephefus, who lived in the reign of Trajan, gives a fhort account of the uterus and its appendages, and describes those tubes which are now called Fallopian, as opening into the cavity of the womb; though Galen arrogates this discovery to himself so particularly, as to say upon this subject, that he was surprised to find they had escaped the notice of the common herd of anatomists; but more especially amazed that a man of Herophilus's accuracy should be ignorant of them: and Rusus has expressly mentioned the opinion of He-

rophilus on this particular.

Galen was born in the time of the emperor Adrian, anno Dom. 131, about fix hundred years after Hippocrates; upon whose works he writes commentaries, and gives some reasonable aphorisms relating to women and children: we have two books of his writing, De Semine, (the third being accounted spurious); one De Uteri Dissectione, de Fatuum Formatione, de Septimestri Partu, lib. 14. & 15. de Usu Partium. He hath also written several books on anatomy and physiology, but nothing de marbis mulierum. In his physiology he is prolis

prolix and inaccurate: his anatomy is pretty exact in many things; but, upon the whole, he contains little

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In Oribafius, who was a physician to Julian, we have a description of the parts, and in several places of his works, an account of the medicines used by the ancients in the diseases of women and children: he has

works, an account of the medicines used by the ancients in the diseases of women and children: he has also a chapter on the choice of a nurse, and another upon the milk, but says nothing of the operation.

Etius, who (according to Le Clerc) lived in the end of the fourth, but in the opinion of Dr Friend, in the end of the fifth century, was likewise a collector from the ancients: for neither he nor Oribastus can be flyled original writers; the last indeed copied from none (almost) but Galen, and was therefore slyled Simia Galeni; whereas the other compiled from all the authors that went before him, many of whom would have been lost in oblivion, had not they been mentioned in his works. He is very particular upon the diseases and management of women; his fourth Sermo of the fourth Tetrad being expressly written on this subject, and containing almost every thing which had been said before him.

In his first chapter, De Uteri Situ, Magnitudine, ac Forma, he distinctly divides the womb into a fundus and neck, and describes the os tinca as ending in the Sinus Muliebris, sive Pudendum; which plainly appears to be no other than what we now call the vagina; for he fays it is above fix inches in length; but his description of the figure of the uterus is imperfect. His leventh chapter treats of conception, from Soranus. The tenth of the pica, taken from some of Galen's works that are loft. His description of this disease is to the following purpose. Young women with child have vitiated appetites, and long for earth, ashes, coal, shells, The distemper continues till the second or third month of gestation; but commonly abates in the fourth. To remedy the nausea and vomiting that attend it, he orders aloes, dried mint, and other stomachies.

In his twelfth and fifteenth chapters, he gives a detail of Aspasia's practice in the care and management of women during pregnancy, and in time of labour;

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but the greatest part of these and the other chapters are taken from *Hippocrates*, to whom he has made a few infignificant additions, until we come to the twenty-second, in which there is a very full and distinct

account of difficult births.

Among the causes that produce difficult labours, he enumerates weakness of mind or body, or both, a confined uterus, a narrow passage, natural smallness of the parts, obliquity of the neck of the uterus, a fleshy substance adhering to the cervix or mouth of the womb, inflammation, abscess or induration of the parts, rigidity of the membranes, premature discharge of the waters, which ought to be detained for moistening and lubricating the parts, a stone pressing against the neck of the bladder, and extraordinary fatness; an anchylosis of the offa pubis at their juncture, by which they are hindered from separating in time of parturition; too great pressure of the uterus on the cavity of the loins, or too great quantity of fæces and urine retained in the rectum and bladder; an enfeebled conflitution, advanced age, slender make, and greenness of years, attended with weakness and inexperience.

He observes, that difficult labours likewise proceed from circumstances belonging to the child that is to be born: from the extraordinary fize of the body, or any part of it; from its being unable (through weakness) to facilitate the birth by its leaping and motion: from the crowding of two or three fœtuses: from twins prefenting together at the mouth of the womb: from the death of the child, as it can give no affishance in promoting labour; from its tumefaction after death, and

wrong presentation.

He fays the natural position is when the head prefents and comes forwards, the hands being extended along the thighs; and the preternatural, that in which the head is turned either to the right or left side of the uterus; when one or both hands present, and the legs within are separated from one another: that the danger is not great when the feet present, especially if the child comes forwards with the hands along the thighs; and that if while one leg presents, the other is kept up or bent in the vagina, this last must be brought brought down: nor is the difficulty great in those that lie across, a circumstance that may happen in three different ways; namely, when the child presents with either side, or with the belly: nevertheless he observes, that the case is easiest when the side presents, because there is more room for the operator to introduce his hand and turn the sœtus, so as that it may come either by the head or feet. The worst position, he says, is when the child presents double, especially if the hipbones come foremost: this double presentation happens with the hips, the head and legs, and the belly; in which last case he observes, that if the abdomen is opened, and the entrails taken out, the parts collapse,

and the position is easily altered.

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Over and above the fore-mentioned causes of difficult labour, he affirms it may be owing to an overthickness or thinness of the membranes which break too late or too foon; as also to external causes, such as cold weather, by which the pores and passages of the body are conftringed; or very hot weather, by which they are too much relaxed. All these circumflances, he fays, ought to be minutely inquired into, and duly confidered, by the phyfician who directs the midwife; nor ought this last to be permitted to tear or stretch the parts with violence. If the difficulty proceeds from the form of the pelvis, he directs the woman to be feated on a flool, her knees being bent and kept afunder; by which means the vulva will be dilated, and the cervix extended in a straight line: and those that are gross or fat are to be placed in the same manner. If the difficulty arises from straitness, stupor, or contractions, he fays it will be proper to relax the parts, by feating the patient over warm steams and fumigations in a place conveniently warmed; by pouring into the vagina warmed oils, and by the application of emollient ointments and cataplasms: for this purpose he likewise recommends the warm bath, unless a fever or other complaint render it improper. Some, he observes, are carried about in a litter in a warm place; and others have been subjected to violent concussions: but those who, by a weak loose habit, are too much enfeebled to undergo labour, ought to be treated with prescriptions

prescriptions that consolidate, strengthen, and constringe: they ought to be sprinkled with persumes and vinegar, anointed with cooling ointments of wine and oil of roles, and fit over infusions of roles, myrtle, pomegranates, and vine-twigs. If the difficulty is owing to the preternatural position of the fœtus, it must be as much as possible reduced into the natural way. If the foot or hand is protruded, the child must not be pulled by either; the limb must be returned. twifted, or lopped off, and the shoulder or hip moved with the fingers into a more convenient fituation. When the whole body of the fœtus is ftrengly preffed down in a wrong position, he advises us to raise it to the uppermost part of the uterus, and turn it downwards again in a right posture: this operation must be performed gently and flowly, without violence; oil being frequently injected into the parts that no injury may be fultained by either mother or child. If the mouth of the womb continues close shut, it must be foftened and relaxed with oily medicines: if there is a stone in the neck of the bladder, it must be pushed up with the catheter, and the urine (if in great quantity) drawn off. If the rectum is filled with fæces, it must be evacuated by glyfters: and proper methods are to be taken when delivery is prevented by inflammation, abicels, ulcer, foft or hard tumours, or any other fuch obstacles.

If the difficulty proceeds from a fleshy substance adhering to the neck of the womb, or from a thick membrane found in those women who are impersorated, the obstacle in both cases must be removed by the knife; and if the membranes that surround the child are too rigid to give way at the proper time, they must be cut without delay: if, on the contrary, the waters are discharged too soon, so as that the parts are left dry, the want of them must be supplied with subricating injections made with the whites of eggs, decoctions of mallows, fenugree, and the cream of barley ptisan.

If the difficulty proceeds from the smallness or strong contraction of the uterus, the parts are likewise to be rendered soft and distensible with subricating ointments and somentations; the mouth of the womb must be

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dilated with the fingers, and the child extracted by force; but should this method fail, the fætus must be cut in pieces, and brought away by little and little. This, he says, is the only resource when the fætus is too large, and the most proper when it is dead; and its death may be certainly pronounced when the presenting part is felt cold and without motion. When two, or three, children present in the neck of the uterus, those that are highest must be raised up to the fundus until the lowest be first delivered.

If the difficulty is owing to the excessive largeness of the head, breast, or belly, he says it will be absolutely necessary to open these cavities; and observes, that the most proper time for placing the woman in labour upon the stool, is when the membranes are felt present-

ing in a round extended bag.

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His twenty-third chapter contains the method of extraction and exfection of the fætus from Phi-Jumenus; and is an accurate detail of the operations recommended above. He fays before the operator begins to deliver by exection he ought to confider the strength of the patient, and determine with himself whether or not there is a probability of faving her life; because, if the is exhausted, enervated, lethargic, feized with convulsions subfultus tendinum, with a difordered pulse, it is better to decline the operation than run the risk of her perishing under his hands: but if he thinks her strength and courage sufficient for the occasion, let her be laid in bed on her back, her head being low, and her legs held afunder by strong experienced women; she may take by wayof cordial, two or three mouthfuls of bread dipped in wine, in order to prevent her fainting; for which purpose, her face may be also sprinkled with wine during The chirurgeon having opened the the operation. pudenda with an instrument, and observed the source of the difficulty, whether tumour, callus, or any of the causes already mentioned, he must take hold of it with a forceps, and amputate with a bistory: if a membrane obstructs the mouth of the womb, it must be divided: if the delivery is prevented by the rigidity of the membranes that invelope the fœtus, they must be B 3.

pinced up with a pair of small forceps, and cut with a sharp knife; then the perforation may be dilated with the singers, so as to effect a sufficient opening for the

passage of the child.

If the passage is obstructed by the head of the sætus, it must be turned and delivered by the seet; but if the head is so impacted as that it cannot possibly be returned, a hook or crotchet must be fixed in the eye, mouth, or over the chin, and in this manner the child may be extracted with the operator's right hand; but besides this crotchet, which ought to be gently introduced, and guarded with the singers of the lest-hand, another must be infinuated in the same manner, and fixed on the opposite side, that the head may be extracted more equally, without sticking in one place, and one of the instruments hold in case the other should slip; and when these crotchets are properly applied, the operator must pull, not only in a straight line, but also from side to side.

He directs us to introduce our fingers besmeared with unctuous medicines, betwixt the mouth of the womb and the impacted body, in order to lubricate it all round. - When the fœtus is delivered as far as the middle, the extracting instrument must be fixed in the upper parts: if the head is either naturally too large or dropfical, it must be opened with a sharp-pointed knife, that it may be evacuated, contracted, and delivered: but if, notwithstanding this operation, it cannot be brought along, the skull must be squeezed together, the bones pulled out with the fingers or boneforceps, and the crotchet fixed for delivery. the head is extracted, there should be a contraction round the thorax, a perforation must be made near the clavicles in the cavity of the breaft, that the bulk may be diminished by the evacuation of the contained humours: if the child is dead, and the belly distended with air or water, the abdomen must also be opened, and, if need be, the intestines extracted.

If the arm presents, it must be separated at the joint of the shoulder: for this purpose a cloth must be wrapped round it, that it may not slip while it is pulled down to the shoulder; then opening the labia, the

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joint will appear at which the limb may be taken off: this amputation being performed, the head must be pushed up, and the fœtus delivered. The same method must be pursued when both arms present, and when, though the seet are forced out, the rest of the body will not follow; in which case the legs must be sepa-

rated at the groins.

If, when the fœtus presents double and cannot be raifed up, the head is farthest down, the bones of the skull are to be squeezed together without opening the scalp or skin, and the crotchet being fixed in some part of it, will bring it forth, the body following in a ftraight line: but if the legs are nearest, they must be amputated at the coxa, and the hips pushed up, so as to allow the head to be squeezed and prepared for ex-When the fœtus presents double, he fays it is better to divide the head from the body than to push up the thorax and deliver by the feet: but should the rest of the body be delivered and the head left behind. the left hand, anointed, must be introduced into the utetus, and the head being brought down with the fingers to the mouth of the womb, one or two crotchets must be fixed on it, in order to bring it along; the most proper places in the head for the application of this instrument being the eyes, ears, mouth, or under the chin. For the extraction of the thorax, it may be fixed in the arm-pits, clavicles, præcordia, breaft, and joints of the back and neck: for the lower parts, on the pubis, or in the pundenda of female children.

If the mouth of the womb be flut by an inflammation, he cautions us against using any violence; but orders it to be softened and relaxed by oily medicines, fumigations, baths, cataplasms; by these means the inflammation will be lessened or removed, and the os internum dilated so as to allow the soctus to be delivered. If the body hath been extracted piecemeal, he directs the parts to be laid together, in order to observe if the whole is delivered; and if any thing re-

mains, it must be extracted without delay.

In his twenty-fourth chapter (the substance of which is also taken from *Philumenus*), he lays down the following directions for extracting the secundines.

The os internum (when the secundines are detained) is fometimes shut, sometimes open, and often inflamed; the placenta fometimes adhering to the fundus, and fometimes in a state of separation. If the os internum is open, and the fecundines, separated from the uterus, lie rolled up like a ball, they are eafily extracted by introducing the left-hand warmed and anointed; and after having taken hold of them, drawing them gently down from fide to fide, and not straight forwards, for fear of a prolapfus vulvæ. If the os uteri is thut, it must be opened slowly with the finger, after it hath been lubricated with oil, or auxunge: if this method should fail, a poultice of barley-meal malaxed with oil, must be applied to the belly, the oily injections repeated; and if the patient's strength will permit, the must take sternutatories of castor and pepper, and potions of those medicines that bring down the menses, fitting at the same time over a fumigation.

All these things must be tried on the first and second days; and if they succeed so as to open the mouth of the womb, the secundines will be easily extracted as above: but if all these methods fail, the woman must be no longer fatigued; they will in a few days putrify and come off in a dissolved sanies; and should the set id smell affect the head and stomach, he prescribes such medicines as are used in obstructions of the menses.

His next chapter, which is taken from Aspasia, treats of the management of women after delivery; and he writes several more on the diseases incident to women, such as inflammations, imposshumes, and cancers of the breast and uterus; compiled from Philumenus, Leonides, Archigenes, Philagrius, Soranus, Rusus, Aspasia, and Asclepiades.

The next confiderable author on this subject is Paulus Ægineta, whom Le Clerc supposed to have lived in the latter end of the fourth century; though Dr Friend brings him down to the seventh: he was the last of the

old Greek medical writers.

His method of practice is much the same with that of Ætius and Philumenus, as above described; and though not so full as they, he is very distinct and particular. He tells us in his presace, that he had collected

lected from others; and although he was the first who had the name of man-mid-wife from the Arbians, the writings of Ætius plainly show that there had been many male-practitioners before him. In the seventy-sixth chapter of his third book, which treats of difficult births, he gives the appellation of natural to all those in which the head or feet present; and all other positions he deems preternatural.

In another place, he observes, that the woman ought to be seated on the stool or chair, when by the touch the mouth of the womb is selt open, and the membranes pushed down. As to his method of extracting a dead child and the placenta, it is much the same with that already described from Philumenus, in the prece-

ding article.

Paulus is supposed to have studied at Alexandria: for long before his time the Roman empire in the west had been over-run and ruined by the Goths and Vandals. Soon after this period, learning began to decline in the east: the schools of Alexandria were removed to Antioch and Haran by the Saracens, who subdued Egypt, and destroyed the Roman empire in Asia: and then the Greek physicians were translated into the Syriac and Arabic, at least the Arabians copied from them. This subject is sully discussed by Dr Friend, in his History of Physic.

Serapion, one of the first Arabian writers, in his Tractatus Quintus, has several chapters on the diseases

of pregnant women, with the method of cure.

The next author of any note belonging to this country was Rhazes; who in the latter end of the ninth century lived at Badgat. Like other fystematic writers in physic, he hath treated of the diseases of women; and written one book expressly on the diseases of children.

In the last chapter of his Liber Divisionum, he orders the membranes when they are too tough, to be pierced with the nail of the finger, or with a little knife; and if the waters are discharged a long time before delivery, so that the parts remain dry, he directs us toanoint them with oily cerates.

Avicenna lived at Ispahan about the year one thou-

fand; and was so famous for his writings all over Asia and Europe, that no other doctrine was taught in the schools of physic till the restoration of learning. He is a voluminous author, treats largely of every part of midwifery, so far as it was known in his time; copying from those that went before him: the operation for the dead child he takes from Paulus; the extraction of the secundines from Philumenus; and the use of the fillet from his countryman Rhazes. He is very full on all the diseases of women relating to the menses, uterine gestation, and delivery.

In all preternatural cases he says, the head ought to be reduced into the natural position: but should this be found impracticable, he advises us to deliver by the feet. He alleges that the head is the only natural way of presenting, and that all other positions are preternatural; though of these the easiest is when the sexus

presents with the feet.

He recommends all the old methods for affifting in natural labours; and if the woman cannot be delivered by these, he orders a fillet to be fixed over the head; if that cannot be done, to extract with the forceps; and should these fail, to open the skull; by which means the contents will be evacuated, the head diminished, and the sector easily delivered.

The next Arabian medical writer is Albucasis, who, in the eleventh or twelfth century, lived at Cyropolis, a city of Media on the Caspian sea; and it appears from an Arabian manuscript in the Bodleian library, that this is the same person who was also known by

the name of Alfaharavius.

He hath written on natural labours in the same way with his predecessors, advising us to affist the birth with fomentations and ointments, and by reducing the child into the natural position when any other part than the head presents. His operation for extracting the dead child is literally the same with that described by Ætius; but whether he copied it from that author, or from other Arabians his predecessors, is uncertain.

What is most particular in this author is, the de-

scription and figures of the instruments then used in midwifery: namely, a vertigo for opening the matrix, which feems to be much of the same contrivance with that which Rhazes calls the torculum volvens. He likewise exhibits the figures of two other instruments for the same purpose; but not one of the three in the least resembles the speculum matricis, described in later writers: an impellens, to keep up the body of the child while the operator endeavours to reduce the head into the natural polition: two kinds of forceps, the larger he calls almisdach, the other misdach; and two different kinds of crotchets. The almisdach is of a circular form, and feems contrived to deliver the head in laborious cases; the misdach is straight and full of teeth, according to the manuscript in the Bodleian lit brary at Oxford; but in the Latin edition, both are circular and full of teeth.

After the twelfth century, physic began to decline in Asia. Theodore Gaza brought the Greek manuscripts from Constantinople, after that city was taken in the year 1453; and about this time the art of printing being found out, all the knowledge of the ancients

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In the next century the practice of physic began to be encouraged in England. Linacre, born at Canterbury, and chosen fellow of All-souls in Oxford in the year 1484, was a man of learning, and projected the foundation of the college of physicians in London; for which he obtained a patent from king Hen. VIII. and was himself president of it till the day of his death.

In the year 1565, one Dr Raynalde published a book on Midwifery, which he had translated into English from the original Latin. He informs the reader in his prologue (as he terms it), that the book, which was called De Partu Hominis, had been translated about two or three years before, at the request of some women, by a studious and diligent clerk; who having performed the task incorrectly, he (Dr Raynalde) had been at great pains to revise and enlarge it in another translation: he also observes, that the Latin edition

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had been formerly published in Dutch, French, Spa-

nifh, and other languages *.

The author of this performance, contrary to the opinions of all other writers) fays, when the child prefents in the natural way with the head, that the face and fore-parts of the fœtus are towards the fore-parts of the mother; and that if any other part prefents, the polition is preternatural. He observes, that in France and Germany the woman is commonly placed in a fitting position, on a stool made in form of a compass; and advises us, in all preternatural cases, to turn the child to the natural position, even when the feet prefent: but if this should be impracticable, to bring it footling, and in extracting to bind the feet together with a linen cloth. This, however, he pronounces a very jeopardous labour. He directs us to provoke and promote the delivery with fumigations and peffaries, and to preferibe internally, affa fœtida, myrrh, caftor, and florax: From which circumstances, he feems to have copied from the ancient writers.

Several authors of note lived and wrote in the fixteenth century, or betwich the years 1530 and 1590, upon the diseases of pregnant women and the different methods of delivery. A collection of the most remarkable among these waiters, who are called the old moderns, was published at Basil, 1586, in 4to, intitled, Gyneciorum Commentaria; and afterwards, in 1597, republished at Strasburg in solio, by Israel Spaeius, professor of medicine in that city, with the addition of two authors who had not been mentioned in the first. At the head of this collection is Felix Platerar, born at Basil: He published tables, explaining the use and structure of the parts of generation proper

to women.

The next is the Harmonian Gynaciorum, collected from

This author was Eucharius Rhodion, whose book was in great esteem all over Germany; and in the year 1532 being translated into Latin, and other languages, from the original High Dutch, became universally the woman's book over all Europe, and was introduced into England; where it was translated by this Dr-Raynalde, who nevertheless has taken great liberties with the author.

from Cleopatra, Moschion, Theodorus Priscianus, and another uncertain author, freed from repetitions and superfluities by Casparus Vulphius.

Then follows Eros or Tortula, first published among the old Latin writers at Venice, by the sons of Aldus.

The fourth place is held by Nicolaus Rocheus, a. Frenchman, whose works, published at Paris, are taken from the Greeks and Arabians; though he hath added fome observations of his own. In his twentyeight chapter he fays, if the child is large, the os uteri must be dilated; if the hand or foot presents. neither must be laid hold on; but the operator, introducing his hand to the buttock or shoulder, must reduce the fœtus into the natural fituation, that is, foas to present with the head. His thirtieth chapter contains directions for extracting the placenta when it adheres: The os uteri must be dilated, and the accoucheur taking hold of the funis, must pull gently from fide to fide, left the uterus should be brought down; then more strength must be exerted by degrees, until the fecundines are brought away. His thirty-fecond chapter treats of monsters.

Ludovicus Bonaciolus of Ferrara is the fifth: His-

works were published at Strasburg.

The fixth is Facobus Silvius, of Amiens in Picardy. Then comes Jacobus Rueff, who published at Zurich: in Switzerland, and afterwards at Frankfort. He is the first who gives a draught of the speculum matricls for dilating the os internum, which he directs to be stretched in width; but by no means lengthwife, left, the ligaments breaking, the womb should fall down. When the feet prefent, and the hands are stretched along the fides, he advises us to deliver footling; but if the hands are up over the head, he fays the child ought not to be brought by the feet, unless the head be very small. If the knees present, he orders them to be pushed up, and the child to be delivered by the feet; but if the breech comes first, it must be reduced, and the foctus brought by the head. The fame practice he recommends in the presentation of the hands, shoulder, or hands and feet together.

He is succeeded by Hieron. Mercurialis, who lived

at Padua, Venice, and Bologna, and practifed much in the fame manner.

The ninth is Johannes Baptista Montanus of Padua, Victor Trincavillius of Venice is the next.

Albertus Bottonus of Padua is the eleventh.

After him comes Joannes le bon Heteropolitanus.

The author who holds the next place in this collection is Ambrofius Paraus, the famous restorer and improver of Midwisery: He lived at Paris, and his works were translated into Latin by Jacob, Gullimeau.

Next to him Spachius places Albucasis the Arabian,

already mentioned. Then

Franciscus Roussetus, who wrote on the Cæsarian operation: His work was translated from French by Casparus Bauhinus; and several of his cases are published in the Memoirs of the Academy of Surgeons, by M. Simon.

There is also the figure of a petrified child, extracted from the womb after the death of the mother; a particular account of which is added to Cordaus's com-

ment upon Hippocrates.

Cosparus Baubinus professor at Basil is the sixteenth.
Then Mauritius Cordaus of Rheims and Paris.

The next is Martinus Akakia of Paris; and the last is Ludovicus Mercatus, a Spaniard.—This author fays, if the child does not present with the head or feet, the case is dangerous, and preternatural; nor is the presentation of the feet without hazard and difficulty. In laborious cases, if the woman be young and vigorous, he prescribes bleeding in the foot, after Hip-

pocrates; but is against the use of the bath.

If the fætus comes double, or presents wrong, he directs us to push it up, and bring down the head, if possible; which ought also to be our aim when the hand or foot presents. He orders the singers to be introduced, as Paulus directs (digitis in unum conductis), that is, the singers and thumb formed into the shape of a cone. He exclaims against the Cæsarian operation as an unchristian undertaking; directs us, when the placenta adheres, to introduce the hand, and pull the funis gently from side to side; and recommends sincezing to the woman, as conducive to its expulsion. When

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When he treats of the manner of extracting a dead child, he fays, with Ætius, we ought first to consider whether or not the woman has strength sufficient to bear the operation; then gives the method of Hippocrates, and in the next page describes the manner of Ætius.

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Having thus given a short sketch of the authors collected by Spachius, I shall return to Paraus, who (as I have already hinted) was the first modern that made any confiderable improvements in midwifery; which continued to his time without any material alteration, even after the other branches of physic had been improved. For example, if the child did not prefent in the natural way, they shook and altered the position of the woman, by which means they imagined the fœtus would turn to the right posture; or they attempted to move it so as that it should present with the head: If this could not be effected, and the feet were near at hand, they brought it footling; but if they failed in this attempt, the child was supposed to be dead, and extracted with crotchets and hooks of various kinds; and if it could not be delivered in that manner, on account of its extraordinary fize or the narrownels of the pelvis, they dismembered and separated the body with crooked and straight knives, and then extracted it piece-meal.

Paraus was the first who deviated from this practice, and expressly orders the child to be turned and brought away by the feet in all preternatural cases. He says, the most natural case is that in which the child presents with the head, and is delivered immediately on the discharge of the waters: it is more difficult when the sectus comes by the feet; and still more so in the presentation of the arm and legs together, the back, belly, arm alone, or any other unnatural position. He directs us to bring away the secundines immediately after the child is delivered: he retains the old notions relating to the diseases and medicines; for the ancient theory was not altered till after the great Harvey found out the circulation of the blood.

Cotemporary with him was the abovementioned Jacobus Rueff, who practifed at Frankfort, and in

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his writings recommends the method of the ancients; a circumstance from which we learn, that the improvements had not then reached Germany. Indeed they were very much retarded by the falle modesty of the women, who were shy of male practitioners, and by the mistaken notions which were at that time entertained of the structure of the uterus; for all the descriptions till the time of Vesalius were very imperfect; and the womb in women supposed to be formed of different cells, resembling those of the brute species.

Jacobus Guillemeau was the pupil of Ambrosius Paraus, adopted and confirmed his master's practice, and

has written with learning and judgment.

About the end of the 16th century, or in Parau's time, furgery in general was more cultivated and improved in Paris than any other part of the world, by means of the hospitals which had been from time to time erected, especially the Hotel Dieu, into which poor women with child, destitute of the necessaries of life, were admitted.

By such opportunities, the surgeons improved their knowledge in midwisery, and by degrees established a better method of practice; the success that attended which, together with the progress of polite literature, that began to flourish about this time in France, got the better of those ridiculous prejudices which the fair fex had been used to entertain, and they had recourse to the assistance of men in all difficult cases of midwisery. This conduct was justified by experience; and the lives of many women and children were saved by the skill of the man-practitioner.

In the year 1668, Francis Mauriceau, after an extensive practice for several years in the Hotel Dieu and city of Paris, published a treatise on midwisery, which exceeded every thing before made public on that subject. He describes the bones of the pelvis, and all the parts subservient to generation; the diseases incident to pregnant women, with the methods of prevention and cure; and, after having given a full and distinct account of all the different labours, and

the way of delivering in each case, concludes his work

with the diseases of women and children.

His method of practice was nearly the same with that of Paraus and Guillemeau; but he is much fuller than either. In laborious cases, when the head presents, and cannot be delivered by the labour-pains, he orders a fillet or stripe of linen to be slit in the middle, and slipped over the head: this contrivance hath since been improved with laces, by which it is contracted on the head. It is introduced by three different instruments, sixed with a great deal of trouble, and, after all, of very little use.

He also invented a tire-tête, which cannot be applied until the skull is opened with a knife; consequently can be of no service in saving the child: and granting the sætus to be dead, other methods are much more effectual. He was ignorant of the forceps. When the head is left in the uterus, he advifes us to extract it, by introducing over it a broad fil-

let like a fling.

He is so full on the diseases, that Boerhaave Acommended him and Mercatus to his scholars on that subject. In his theory of conception, he hath not deviated from the opinions of Hippocrates; and in his second volume he hath published a great many judicious aphorisms, that are now translated into English by Mr Jones: indeed, his writings were so universally approved, that they have been translated into several different languages.

Cotemporary with Mauriceau were Dr Chamberlain and his three fons, who practifed midwifery in London with great reputation. One of these three sons, father to the late Dr Hugh Chamberlain, translated the first volume of Mauriceau into English; and in a note upon that author's method of extracting the child by the help of the crotchet and tire-tête, affirms, that his father, brothers, and himself, were in possession of

a much better contrivance for that purpole.

This was no other than the forceps, which they kept as a nostrum, and was not generally known till the year 1733, when a description of the instrument was published by Chapman. Long before that period indeed.

indeed, several kinds of forceps or extractors, different from those mentioned by the Arabians, were used in France, Germany, and other places; but all of them fell short of the instrument used by the Chamberlains, and said to be contrived by the uncle.

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In the last century, although there were such excellent practitioners in London, and even before the translation of Mauriceau, Guillemeau's book on midwifery had been translated into English; and in it all the abfurd notions about spells and amulets were left out: nevertheless one Nicholas Culpepper, who styles himself Gent. student in physic and astronomy, published at London a book intitled, A Directory for Midwives; in which he has copied the theory and practice of the old writers, many of whom he mentions, namely, Hippocrates, Galen, Ætius, &c. and frequently advises the reader to consult his translations of Sennertus, Riverius, Riolanus, Bartholin, Johnston, Veslingius, Rulandus, Sanctorius, Cole, the London Dispensatory, and a book which he himself had published under the title of The English Physician. His performances were for many years in great vogue with the midwives, and are still read by the lower fort, whose heads are weak enough to admit such ridiculous notions.

He was succeeded in that way of writing by one Dr Salmon, who was also a great translator and compiler. He was partly author of a spurious piece called Aristotle's Midwifery, which hath undergone a great many editions, and contributed to keep up the belief of the marvellous effects of various medicines.

Mauriceau, in 1706, published a fecond volume, containing about eight hundred observations; but, long before that period, he had gained such reputation by his writings, as encouraged others of the same nation to write on the same subject. Accordingly, we have the works of Portal, Peu, and Dionis; but all of them fall short of Mauriceau. About this time also Saviard wrote several observations on the same art.

Henry Daventer practifed at Dort in Holland; and in 1701 published a book on midwifery. He observed,

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ved, that an imaginary straight line falling down from the navel would pass through the middle of the pelvis. This will nearly hold true when the abdomen is not distended; but in the last month of uterine gestation, in order to pass through the middle of the pelvis such a line must be let fall from the middle space betwixt the navel and scrobiculus cordis. This, however, was a good hint, and useful in practice.

He pretends to have made several useful discoveries, which seem seasible enough to those who have not had the opportunity of an extensive practice; such as the side or wrong positions of the os internum and fundus uteri, which (according to him) are chiefly the occasion of lingering, dissicult, and dangerous labours. He seems to have been led into this mistake, by supposing that the placenta always adhered to the fundus uteri. As to the difficulties proceeding from the wrong position of the os internum, a practitioner would be apt to believe he had never waited for the effect of the labour-pains, which generally open it, by pushing

down the waters or head of the child.

He was seldom called except in difficult cases, often proceeding from a distorted pelvis, which is common in Holland. When this is the case, the head of the child is commonly cast forwards over the pubis by the jetting in of the sacrum; or if one ilium is higher than the other, the os internum and fundus are thrown to different sides; but even then the chief difficulty is owing to the narrowness of the pelvis. The uterus is very seldom turned so oblique as he supposes it to be; or if it were, provided the child is not too large, nor the pelvis narrow, I never found those difficulties he seems to have met with: and should the labour prove tedious on account of a pendulous belly, by altering the woman's position, the obstacle is commonly removed.

For example: let her breech be raised higher than her shoulders; or she may be laid upon her side, in a preternatural case, when it is necessary to turn and deliver the child by the seet. Nevertheless, though he has run into extremes about the wrong positions of the uterus, in which he is the more excusable, as he had

the fondness of a parent for a theory that he alleges was his own, yet there are some very useful hints in his book, particularly that about floodings, in which he directs us to break the membranes in order to refrain the hæmorrhagy; and his method of dilating the os externum.

The next noted writer in this way is Lamotte, who lived at Valognes, near Caen in Normandy; and in 1715 published a book on midwifery, which feems to be the best of the kind since Mauriceau, and is translated into English by Mr Tomkins. tains about four hundred observations, the greatest part of which are illustrated with many judicious reflections.

In describing a case in which the head presented, he mentions the great fatigue it had cost him to turn and deliver by the feet; and hopes that some easier method will be found out for extracting the child in fuch circumstances: fo that, although he wrote fo lately, he must have been ignorant of the forceps. He, as well as Daventer, enclaims against the use of instruments; and in most laborious cases, when the head presented, turned and extracted the fœtus by the feet.

A number of such cases he has recounted; but I am afraid that, like other writers, he has concealed those that would have been more useful to the young practitioner, and only given a detail of his own that were fuccessful: for certain it is the head of the child is often so large, or the pelvis so narrow, that labourpains cannot possibly force it away; and frequently, when the fœtus hath been turned with great fatigue, and the body actually extracted, the force required to deliver the head with the hands alone is fuch as deftroys the child; and fometimes it is absolutely im-· possible to bring it along without the help of instruments.

For my own part, when I first began to practife, I determined to follow the method of those gentlemen; but having by these means lost several children, and fometimes the mother, I began to alter my opinion, and confult my own reason: in consequence of which, in cafe a view the lif on th the fo mecha contri tifies bled een e No

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in cases of such emergency, I opened the head, with a view of saving the woman if I could not preserve the life of the child. In the course of my deliberations on this subject, I likewise tried to improve upon the forceps, which seemed to me an instrument more mechanically adapted and easier applied than any other contrivance hitherto used: and surely experience justifies the use of this expedient, by which we are enbled to save many children which otherwise must have been destroyed.

Not that I would be thought to exult over those uthors whom I have mentioned, as mostly enemies to Il instruments whatever: in other things they have written very judiciously; and are blame-worthy in nohing so much as in having suppressed those unsuccessful cases which must have happened to men of their

xtensive practice.

I own indeed, when the woman has not strength nor pains sufficient to force along the child, and the lifficulty does not proceed from a large head or narow pelvis, the method of turning will prove successful; but, if in the other extreme, I appeal to all andid practitioners, whether many children are not oft, even when the head does not present, and when he body is first brought down, because the fœtus annot be delivered in another manner.

The next writer in midwifery is M. Amand of Pais, who describes the method of extracting the head, when left in the uterus, by means of a net. The ontrivance is ingenious, but is not applied without reat trouble, and cannot succeed when the pelvis is

oo narrow, or the head too large to pass.

Edmund Chapman practifed inidwifery several years in the country before he settled in London; where, in 1733, he published a short account of the practice of midwifery, illustrated with about sifty cases; and is the first person who made public a description of the forceps used by the Chamberlains. Gistard's observations were published in the following year, by Dr Hody, containing many useful remarks and histories of cases in which he had used the extractors or proceps.

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Heister, professor at Helmstadt, a little town in the dukedom of Brunswick, in the year 1739, published at Amsterdam a treatise on surgery; in which we find a very concise and distinct account of the practice of midwifery, as well as of the Cæsarian operation.

Mr Ould surgeon in Dublin, in the year 1742, published a treatise on the practice of midwisery: in which there are two good observations; one relating to a case in which the head presents, and the other specifying what is to be done when delivery is retarded by the twisting of the sunis round the neck of the child. He presers his terebra occulta to the scissars, probably because he did not know the proper dimensions of this last instrument. The very next year, Mesnard published at Paris a book on the same subject, by way of question and answer; and is the first who contrived the curved in lieu of the straight crotchets, which is a real improvement.

Over and above the writings of those authors whom I have mentioned, there are a great many curious and extraordinary observations on the practice of this art in Shenckius, Hildanus, Bonetus, the Philosophical Transactions, the Academies of Sciences and of Surgeons, and the Medical Essays of Edinburgh: and besides these, the best modern authors who have written on the diseases of women and children, are Sydenham, Harris, Boerhaave, Friend, Hamilton, Hossiman, and

Shaw.

On the whole, that the young practitioner may not be misled by the useless theories and uncertain conjectures of both ancient and modern writers, it may be necessary to observe in general, that all the hypotheses hitherto espoused are liable to many material objections; and that almost every system hath been overthrown by that which followed it.

This will probably be always the case: and indeed, as theory is but of little service towards ascertaining the diagnostics and cure of diseases, or improving the practice of midwifery, such inquiries are the less material. What Hippocrates has written about the form of the uterus and its various motions, conception, the formation of the child, the seventh and eighth

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month's births, was believed as infallible till the last century, when his doctrine of conception and the nutrition of the fœtus was overthrown; and many new and uncertain theories, on the same subject, introduced.

Some of the moderns conclude, that the ancients never turned and brought children by the feet, because Hippocrates directs us, in all cases, to bring the head into the natural situation; and says, that when delivery is performed by the feet, both mother and child are in imminent danger. Celsus, and all the writers till the time of Paraus, adopted this practice of bringing the head to present; but, at the same time, many of them observe, that if this be not practicable, we must search for the feet, and deliver the sectus in that manner. Celsus says, if the feet are at hand, the child is easily delivered footling: and Philumenus goes still farther, saying, that if even the head should present, and the child cannot be delivered in that position, we must turn and bring it by the feet.

With regard to the fillet and forceps, they have been alleged to be late inventions; yet we find Avicenna recommending the use of both. The forceps recommended by Avicen is plainly intended to save the setus; so he says, if it cannot be extracted by this instrument, the head must be opened, and the same method used which he describes in his chapter on the

delivery of dead children.

To conclude, we find among the ancients feveral valuable jewels, buried under the rubbish of ignorance and superstition; because the assistance of men was seldom solicited in cases of midwifery till the last extremity: And those disadvantages being considered, we ought to be surprised at finding so many excellent observations in the course of their practice; and be assamed of ourselves for the little improvement we have made in so many centuries, notwithstanding our opportunities and the advantages we had from their experience.

True it is, we have established a better method of delivering in laborious and preternatural cases; by which many children are saved that must have been destroyed destroyed by their manner of practice: but are not many modern practitioners justly branded for their fordid and unfocial principles, in professing nostrums, both with regard to medicines and methods of delivery? Infomuch, that I have heard a gentleman of eminence in one of the branches of medicine affirm, that he never knew one person of our profession who did not pretend to be in possession of some secret or another: from whence he concluded, that we were altogether a body of empirics. Such reflections ought to make a fuitable impression upon the minds of the honest and ingenuous, prompt them to lay aside all fuch pitiful selfish considerations, and for the future act with openness and candour; which cannot fail of redounding to the honour of the profession and the good of fociety, as well as their own advantage.

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TREATISE

OF

MIDWIFERY.

BOOK I.

CHAP. I.

The Structure and Form of the PELVIS, so far as it is necessary to be known in the Practice of Midwifery.

SECT. I. Of the BONES.

the Os Sacrum, with its appendix known by the name of Coccyx, and he two Offa Innominata. The Sacrum in hildren is divided into five distinct bones, and the Coccyx into four cartilages; but, in dults, these last are formed into as many noveable bones, and the divisions of the Sarrum offished so as to become one bone.

Vol. I. C Each

Each Os Innominatum is, in infants, composed of three different bones, under the appellation of Os Ilium, Ischium, and Pubis; which are joined to one another at the acetabulum or cavity that receives the round head of the thigh-bone. This composition is, in point of figure, so irregular, that although in adults the three are offissed into one bone, those different names are still used, in order to distinguish one part of it from the other.

The Ossa Innominata of the opposite sides are joined to one another in the fore-part at the Pubes, by a thick cartilage and strong ligaments; and the posterior part of each Os Ilium is connected with the upper and lateral part of the Sacrum by the same apparatus.

Divers authors and practitioners in this art have alleged, that, towards the latter end of gestation, when all the parts of the Abdomen are strongly pressed by the increased Uterus, an extraordinary quantity of Mucus is secreted, not only by the glands of the Os internum and Vagina, but also by those belonging to the cartilages and ligaments that connect the bones of the Pelvis; by which means, the ligaments and cartilages are foftened and relaxed, and the bones are separated from one another in time of labour. But, from experience and observation, I may venture to affert, that this separation is by no means an usual fymptom, though fometimes it may happen; in which case the patient suffers great pain, and continues lame in those parts for a considerable time after delivery.

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In some women, indeed, a kind of obscure motion may be perceived, when the child's head is forced into the Pelvis, by strong pains: the junctures of the Sacrum with the Ossa Ilium, as well as that of the Ossa Pubis, seem to yield a very little alternately, in order to accommodate themselves to the shape of the head, as it is squeezed down and passes through the Pelvis: but the bones are not separated to any considerable distance. See Vol. II. Collect. I. No I.

The Coccyx is moveable at its connection with the Sacrum; as are also the four bones that compose it, in their articulations one with another: and this motion continues in adults, as well as in those of more tender years. In old age indeed, and even in young people who have suffered bruises upon the part, attended with great pain and inflammation, we frequently find the different pieces of this bone rigidly cemented together: But this anchilosis the more seldom happens, because they undergo a gentle motion at every excretion of the seces, which helps to preserve their mobility. See Vol. II. Coilect. I. No 2.

SECT. II.

THE brim or upper part of a well-shaped Pelvis represents a kind of imperfect oval, or something that approaches a triangular figure. If we consider it as an oval, the long axis passes from side to side; but, as a triangle, the posterior part forms one side, and the Ossa C 2

Pubis constitute the opposite angle: so that, behind, it is composed of the broad part of the Sacrum, where it joins with the last Vertebra of the loins; on each side, by the inferior parts of the Ilia; and before, by the upper parts of the Osla Pubis.

The lower circumference of the Pelvis is formed, behind, by the inferior part of the Sacrum and its appendage; on each fide, by the lower part of each Ischium, and a broad ligament which rises from the spine of that bone, and, with the Coccygæus muscle, is inferted into the edge of the Coccyx and the lower part of the Sacrum; and before, by the inferior parts of the Ossa Pubis, and the two processes that descend on each side to join with those that rise from the Ischia; by which conjunction the Foramen Magnum Ischii is formed on each side.

When the body of a woman is reclined backwards, or half fitting half-lying, the brim of the Pelvis is horizontal, and an imaginary straight line descending from the navel would pass through the middle of the cavity: but in the last month of pregnancy, such a line must take its rise from the middle space between the navel and Scrobiculus Cordis, in order to pass through the same point of the Pelvis. See the Anatomical Figures, Tab. I. II. XII.

SECT. HL.

IN the confideration of the Pelvis, three circumstances are to be principally regarded and remembered; namely, the width, the depth,

and form of the cavity on the infide.

1. The extent of the brim from the back to the fore part, commonly amounts to four inches and one quarter; and from one fide to the other, the distance is five inches and a quarter: fo that this difference of an inch in the different axes ought to be carefully attended to in the practice of Midwifery. See Tab. I. But the width of the lower part of the Pelvis is the reverse of this calculation. when the Os Coccygis is preffed backward by the head of the child: because, in that case, the distance between the Coccyx and the lower part of the Os Pubis is near five inches; whereas the inferior and posterior parts of one Os Ischium are no more than four inches and a quarter from some parts of the other. Indeed, the width of the lower part of the Pelvis is naturally the fame in both diameters; fo that this difference is occasioned by the yielding of the Coccyx in the birth. though the motion of the Os Coccygis backward should make little odds to the width, the back-part of the Pelvis, when measured from the brim, being three times deeper than at the Pubes on the fore-part, answers the fame purpose as if it were wider from the back. to the fore part, than from fide to fide; because, by the time that the child's head is come-

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down to the lower part of the Pelvis, and the forehead turned back to the concavity formed by the Os Sacrum and Coccygis, part of the Os Occipitis is come out below the Pubes. See Tab. II. XIV. XVII.

2. The depth of the Pelvis, from the upper part of the Sacrum, where it is articulated with the last vertebra of the loins to the, lower end of the Coccyx, is about five inches in a straight line; but when this appendix is stretched outward and backward, the distance will be more.

The depth from the fides to the brim towards its fore-part, to the lower parts of the Ischia, is four inches; and from the upper to the lower parts of the Ossa Pubis, where they join, the distance is no more than two inches: So that, in the dimensions of the Pelvis, the side is twice and the back-part three times the depth of the fore-part.

3. Nor is the form and shape of the inside of the Pelvis to be neglected by the practi-

tioners of Midwifery.

The Sacrum and Coccyx being convex on the outside, exhibit a concave figure on the inside: the curve being increased towards the lower end, so as that, from the extremity of the Coccyx to the middle of the Sacrum, the sweep nearly represents a semicircle; and from thence the bone slopes upward and forward.

From the upper part of the brim on each fide (but nearer the fore than the back part) to the lower parts of the Ischia, the descent is perpendicular: and the opening on each fide,

betwixt the lower parts of the Sacrum and the posterior part of each Ischium, is about three mehes deep, and two and an half in width, The upper part of this vacuity on each fide. gives passage and lodgement to a muscle, vesfels, nerves, &c. At its lower part, the Coccygæus muscle and ligament above mentioned are stretched across from bone to bone; and this ligament is on the outfide strengthened with another strong expansion, rising from the tuberofity of the Ischium, and fixed into the edge of the Sacrum and Coccyx. All these parts yield and stretch, forming a concave equal to that of the Sacrum, when the fore or hind head of the child is pushed down at the fide and back-part of the Pelvis.

From the upper to the under parts of the Offa Pubis, which form the anterior angle of the Pelvis, the descent is almost perpendicular, or rather inclining a little backwards: so that the inside of the basin is bent into a concave behind, and descends in almost a straight line before; while the Iliaslope outwards as they rise, and the Vertebræ of the loins turn backwards making an obtuse angle with the Sacrum.

On the whole, it is of the utmost consequence to know, that the brim of the Pelvis is wider from side to side than from the back to the fore part; but that, at the under part of the basin, the dimensions are the reverse of this proportion; and that the back-part, in point of depth, is to the fore-part as three to one, and to the sides as three to two.

Though those dimensions obtain in a well-C 4 shaped!

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shaped Pelvis, they fometimes vary in different women; and the reason of this remark will be more fully explained, when we treat of the method of delivery, in the different kinds of labours. See Tab. I. II.

SECT. IV. Of a distorted PELVIS.

THE Pelvis in decrepit women is not always distorted; because the distortion of the spine, in many women, does not happen till the age of eight, ten, twelve, or sourteen; when, being tall and slender, it is occasioned by mismanagement in their dress, lying too much on one side, and other accidents; without having any effect upon the Pelvis, the shape of which is by that time ascertained.

By most of those who have been ricketty in their infancy, whether they continue little and deformed, or, recovering of that disease, grow up to be tall stately women, are commonly narrow and distorted in the Pelvis, and consequently subject to tedious and dissiputed tabours: for, as the Pelvis is more or less distorted, the labour is more or less dangerous

In ricketty children, the bones are foft and flexible; and as they cannot run about and exercise themselves like those of a more hardy make, the Pelvis, in sitting upon stools or the nurse's knees, is, by the weight of the head and body, often bent and distorted in the following manner:

The Coccyx is pressed inwards towards the middle

middle of the cavity of the Pelvis; the adjacent or lower part of the Sacrum is forced outwards; while the upper part of the same bone is turned forward with the last Vertebra of the loins, approaching too near to the upper part of the Pubes: So that the distance, in fome women, from the back to the fore-part of the brim, is not above three inches; in others, no more than two; and fometimes, tho rarely, not above one inch and a half. See Collect, I. Nº 3. Tab. III. XXVII. XXVIII.

In others, the lower Vertebra of the loins: with the upper end of the Sacrum, jet inwards and to one fide: the Offa Pubis, instead of being inwardly concave, are fometimes convex : and the lower part of each lichium fo near to one another, that the distance, instead of four inches and one quarter, will not amount tomore than three, and in fome cases not for

much. See Collect. I. No 4.

Sometimes the Vertebræ that compose the Sacrum ride one another, and form a largeprotuberance in that part which ought to be concave; but the most common circumstance of distortion is the jetting forward of the last: Vertebra of the loins with the upper end of the Sacrum, forming a more acute angle with: the spine; and in this part of the passage the: head most commonly sticks. See Collect. It.

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SECT. V.

THE Pelvis in women is wider than in men, the Ilia spreading more outward, in order to sustain and allow free space for the stretching of the Uterus; the Sacrum is more concave; and the processes of the Ossa Pubis, at their junction with the Ischia, are not so near to one another.

In order to demonstrate the advantage of knowing the wideness, depth, and figure of the inside of a well-formed Pelvis, it will be necessary to ascertain the dimensions of the head of the child, and the manner of its pas-

fage in a natural birth.

The heads of those children that have passed easily through a large Pelvis, as well as of those that have been brought by the seet, without having suffered any alteration in point of shape by the uncommon circumstances of the labour; I say, such heads are commonly about an inch narrower from ear to ear, than from the fore-head to the under part of the hind-head.

That part of the head which presents, is not the Fontanel (as was formerly supposed), but the space between the Fontanel and where the Lambdoidal crosses the end of the Sagittal Suture, and the hair of the scalp diverges or goes off on all sides: for, in most laborious cases, when the head is squeezed along with great force, we find it pressed into a very long oblong form, the longest axis of which

which extends from the face to the Vertex. From whence it appears, that the crown or Vertex is the first part that is pressed down. because, in the general pressure, the bones at that part of the skull make the least resistance. and the face is always turned upward; (fee Tab. XXVII. XXVIII.) Sometimes, indeed. this lengthening or protuberance is found at a little distance from the Vertex backward or forward, or on either fide; and fometimes (though very feldom) the Fontanel or forehead presents; in which case they protuberate. while the Vertex is pressed and remains quite flat: But these two instances do not occur more than once in fifty or an hundred cases that are laborious.

Now, supposing the Vertex is that part of the head which presents itself to the touch in the progress of its descent, the Fontanel is: commonly upwards at one fide of the Pelvis. and is diffinguished by the Fontanel where the Coronal Suture croffes the Sagittal, the frontal bones at that part having more acute angles than the parietal; and when the hindhead comes down to the Os Ischium of the contrary fide, one may feel the Lambdoidal Suture where it crosses the head of the Sagittal. and, unless the scalp be very much swelled, distinguish the Occiput at its junction with the parietal bones by the angle, which is more obtufe than those that are formed at that part of the skull: Besides, in this position, the earof the child may be eafily perceived at the Ose Pubis. As the head is forced farther along. C 6.

the hind-head rifes gradually into the open fpace below the Ossa Pubis, which is two inches higher than the Ischium, while at the the same time the forehead turns into the hollow of the Sacrum.

This, therefore, is the manner of its progression: When the head first presents itself at the brim of the Pelvis, the forehead is to one fide, and the hind-head to the other, and fometimes it is placed diagonal in the cavity: thus the widest part of the head is turned to the widest part of the Pelvis, and the narrow part of the head from ear to ear applied to the narrow part of the Pelvis, between the Pubes and the Sacrum. (See Tab. XIII. XVI.) The head, being squeezed along the Vertex, defeends to the lower part of the Ischium, where the Pelvis becoming narrower at the fides, the wide part of the head can proceed no farther in the fame line of direction: but the Ischium being much lower than the Os Pubis, the hind-head is forced in below this last bone. where there is least refistance. The forehead then turns into the hollow at the lower end of the Sacrum, and now again the narrow part of the head is turned to the narrow part of the Pelvis. (See Tab. XIV. XVII.) The Os Pubis being only two inches deep, the Vertex and hind-head rife upward from below it; the forehead preffes back the Coccyx; and the head, rifing upward by degrees, comes out with an half-round turn from below the sharebone: the wide part of the head being now betwixt the Os Pubis and the Coccyx, which being

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being pushed backwards, opens the widest space below, and allows the forehead to rise up also with a half-round turn from the under part of the Os externum. See Tab. XVIII. XIX.

From these particulars, any person will perceive the advantage of remembering that the Pelvis at the brim is wider from fide to fide. than from the fore to the back part, while below it is the reverse in point of dimension; that the Pelvis is much shallower at the Os Pubis than at the fides and back-part; and that the Sacrum and Coccyx form a large concave in their descent, whereas that of the Os Pubis is perpendicular. Neither is it less necessary to consider the form of the head, as above described; for the knowledge of these things will convey a distinct idea of the manner in which the head is to be brought along in laborious cases; on what occasions the use of the forceps may be necessary; and when the method must be varied, as the form of the head or Pelvis may chance to vary from our description.

Although the position of the head, in natural and laborious births, is commonly such as we have observed, it is not always the same, but sometimes differs according to the different figures of the Pelvis and head, and the posture of the child in utero: For when the waters are in small quantity, or the membranes broke, so that the body of the child is close confined by the womb, if the fore-parts are towards the belly of the mother, that po-

fition may hinder the head from making the proper turns as it is pushed down, and the forehead may be forced towards the groin or Pubes. (See Tab. XX. XXI.) Sometimes, even in a well-formed Pelvis, if the Fontanel presents itself with the forehead to one side of the brim, and the hindhead to the other, when the head is forced down by the increasing pains, there will be less resistance at the Vertex than at any other part; confequently the diameter from the fore to the hind head will be lessened; and this last, by accommodating itself to the circumstances of the pressure, be first squeezed down, and at length come forward in the natural way: or, should the ear present itself, the Vertex will be forced down in the same manner. But if the forehead be nearer than the Vertex to the middle of the brim of the Pelvis, every pain will force it farther down, and when delivered it will rife in form of an obtuse cone or sugar-loaf; and in that case the crown of the head will be altogether flat. But if, instead of the Vertex or forehead, the Fontanel should first appear, the space from the forehead to the crown will then rife in form of a fow's back; and in 'all these cases, the head is brought along with greater difficulty than in those where the Vertex is first produced: and, in all laborious cases, the Vertex comes down, and is lengthened in form of a sugar-loaf, nine-and-forty times in fifty instances. When the forehead presents, the face is fometimes pressed forwards. (See Tab. XXII.) If the Pelvis be as wide from the

the back to the fore part as from fide to fide; (though this feldom happens), the crown may be pushed down at the Pubes, and the fore-head afterwards squeezed into the hollow of the Sacrum, without making the foregoing turns. If the belly of the child is to the fore-part of the Uterus, the Vertex may be towards the Sacrum, and the forehead to the Pubes or groin: so that all these uncommon positions are attended with difficulty.

CHAP. II.

Of the external and internal Parts of Generation proper to Women.

SECT. I. The external Parts and VAGINA.

THE Mons Veneris is fituated at the upper part of the Pubes, from which alfo begin the Labia Pudendi, stretching down as far as the lower edge, where the Frænum Labiorum or Fourchette is formed.

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The Clitoris with its Præputium is found between the Labia, on the middle and forepart of the Pubes; and from the lower part of the Clitoris, the Nymphæ rifing, spread outwards and downwards to the sides of the Os Externum, forming a kind of sulcus or surrow, called the Fossa Magna or Navicularis, for the direction of the Penis in coition, or the singer in touching, into the Vagina. See Collect. II. No. 1, 2.

The Meatus Urinarius is immediately below

the under edge of the Symphysis of the Ossa Pubis, and at the upper part of the Ossa Externum, which is the orifice of the Vagina, situated immediately below the said bones of the Pubes: the lower edge of which bones is equal to the lower edge of the Franum or Fourchette, which bounds the inferior part of the Fossa Magna and Ossa Externum, restraining it as if with a bridle.

The Perinæum extends from this border to the Anus, being about one inch or one and an half in length: the wrinkled part of the Anus is about three quarters of an inch in diameter; from thence to the Coccyx the distance is about two inches: so that the whole extent from the Fourchette to this bone amounts to about four inches, or four and a quarter.

What remains of the lower part of the Pelvis is covered and filled up with the integuments, adipose membrane, and the muscles called Levatores Ani; while within these are contained the muscles belonging to the Clitoris, mouth of the bladder, Os Externum, and

Anus. See Tab. IV.

In young children, there is a thin membrane called the Hymen, extended over the lower part of the Os Externum, representing the figure of a crescent; the concave and open side being turned towards the Meatus Urinarius. In some, the middle of this concave is attached to the lower part of the Meatus, forming two small opennigs; nay, in some adults this membrane has entirely shut up the entrance of the Vagina, so that they have been altogether imperso.

perforated; but, when broke, it recedes, and forms the Carunculæ myrtiformes. See Col-

lect. II. No 3. 4. 5.

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ne ne On each fide of the Meatus Urinarius are two small lacunæ or openings, the tubes of which, ending in a kind of sacculus, come from the prostrate gland: from these a thin sluid is ejected in time of copulation, and that from some women with considerable force; and sometimes, though seldom, to the quantity of several drachms.

The Urethra in women is about one inch and an half in length. The Vagina is formed of a strong thick membrane, of a spongy texture, more contracted in virgins than in married women. When stretched to its full extent, it may be about five, fix, or feven inches long, and two in width, according to the difference of stature in different women: but, when the Uterus hangs down in the Vagina, the length will not be more than two or three inches; and it may be stretched with the finger to the wideness of three or four. The infide of it, in young women, is full of rugæ, folds or wrinkles, which are partly obliterated in those who have born children. The upper end of the Vagina is joined to the circumference of the lips of the Os Uteri, which resemble the mouth of a puppy or tench; and a thin expansion of this membrane, being reflected inwards, covers the exterior part of these lips, which in virgins are fmooth and of an oval form. It is also continued along the inside of the Uterus, constituting the internal membrane of the neck and Fundus, which is likewise full of plica, especially in young subjects. See Tab. V. VI.

As to the different names of those parts, the book of Schurigius, published at Dresden in the year 1729, may be consulted. The entry of the Vagina is commonly called the Sphineter Vagina, and the mouth of the womb is often distinguished by the appellation of Os Tinca: but, as the mention of these parts will frequently occur in the course of this treatise, I shall, in order to avoid consustant or mistake, call the first Os Externum, and the other Os Internum, through the whole book.

SECT. II. Of the UTERUS.

THE Uterus is about three inches long from the Os Internum to the upper part of the Fundus, and one inch in thickness from the fore to the back part. It is divided into the Neck and Fundus; the length of the neck being an inch and three quarters, while that of the fundus is one inch and one quarter. The width of the Uterus at the neck is about one inch, but at the fundus twice as much. The Uterus is smaller in young women.

The outfide-shape of the Uterus in some measure resembles a flattened cucurbit, or that kind of spear which hath a long neck.

The canal or entrance from the Os Internum to the cavity of the Fundus Uteri, will admit a common director; being a little wider in the middle, and more contracted at the upper end.

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The cavity of the Fundus, is in point of figure fomething between an oval and triangle: one of the angles commencing at the upper end of the foresaid canal, and the other two expanding the fides of the Fundus, from which arise the Fallopian tubes. These tubes are about three inches long; and fo narrow at their entrance from the Uterus, as scarcely to admit an hog's briftle; but the cavity of each turns gradually wider, and ends in an open mouth or sphincter, from the brim of which is expanded the Fimbria or Morfus Diabolia that generally bears the likeness of jagged leaves, and in some resembles an hand with membranous fingers, which is supposed to grasp the Ovum when ripe and ready to drop from the Ovarium.

The Uterus is formed first of the infide membrane that rifes from the Vagina, and lines all the interior part of the womb: immediately above this coat is the thick substance of the Uterus, composed of a plexus of arteries, lymphatics, veins, and nerves; and the veffels on its furface, when injected, feem to run in contorted lines. It appears to be of the fame glandular texture (though not fo compact) as that of the breafts, without any muscular fibres, except fuch as compose the coats of the vessels: neither is there any necessity for that muscle which Ruysch pretended to discover at the fundus, for the convenience of forcing off the placenta; because this cake as frequently adheres to other parts of the womb as to the fundus.

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The fubstance of the Uterus appears more compact and pale than that of muscles; or if it be mufcular, at least the fibres are more close, and more intricately disposed, than in other muscular parts. The blood-vessels of the womb, in the virgin or unimpregnated state, are very fmall, except just at their approach to its fides, at the roots of the Ligamenta lata: But, as foon almost as they enter its substance, they are dispersed into such numbers of smaller branches through the whole, that, when it is cut, we can observe but few, and those very small, orifices, much less any cavities that deserve the name of finuses. Indeed, when this part is minutely injected, it feems to be almost nothing but a mass of vessels; a circumstance common to it with other parts of the body: And anatomists are agreed, that the greater number of veffels visible in such nice injections, are those thro' which the ferum or lymph of the blood circulates in the living body; whence the error loci in an Ophthalmia is imitated by fubtile injections of coloured matter into the arteries of the dead subject. See Tab. V.

When the Uterus stretches in time of gestation, the vessels are proportionably dilated by an increase of the sluid they contain: so that, at the time of delivery, some of them are capacious enough to admit the end of the little singer. Yet the substance of the womb, for the most part, instead of growing thinner, as Mauriceau alleges, or thicker, according to Daventer, continues of its natural thickness during the whole term of pregnancy; and this equality

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equality is maintained by the gradual distention of the vessels that enter into its composition. In time of labour, indeed, as the waters are discharged, the Uterus contracts itself and grows thicker; and the resistance ceasing at the delivery of the child and after-birth, it becomes smaller and smaller, until it has nearly resumed its natural dimensions. See Collect. III. No. 1. 2. Tab. IX. XII.

For, as the Uterus contracts itself after parturition, the arterial blood cannot flow into it in the same quantity as that with which the vessels are filled in their state of distention. The sluids are gradually emptied into the Vena Cava Ascendens, but chiefly through the mouths of the vessels that open into the cavity of the womb; and the vessels themselves that were stretched, elongated, and seemed to recede from one another, are also contracted by degrees, and that in such a direction as to reduce the Uterus into the same shape and size which it bore before impregnation: nay, the sibres are again so compacted, that they, and even the vessels, are scarce discernible.

The Vagina on its outfide is covered with a thick adipose membrane: by means of which it is on the fore-part attached to the lower part of the bladder, and on the back-part to the lower end of the Rectum and Anus; and by the same means all these parts are connected with the Peritonæum, or internal surface of the

The Uterus is contained in a duplicature of the Peritonæum, which covers it every where above, above, and is connected with its substance by a very thin cellular membrane; as for the Peritonæum in itself, it is a smooth membranous expansion, that covers all the inside of the Abdomen, and gives external coats to all the Viscera contained in that cavity. On the fore-part it lines the muscles of the Abdomen and Diaphragma; backwards, it covers the abdominal Viscera in general, the Aorta and and Vena Cava Descendens, the kidneys, ureters, and spermatic vessels, the external and internal Iliacs, the Psoas and muscles that cover the infide of the Hium, whence it rifes double, and forms the Ligamenta Lata, in which are contained the Ovaria and Fallopian tubes. This duplicature, where it meets in the middle, invelops all the Uterus, as before obferved, and gives a covering to the round ligaments that rife from each fide of the Fundus Uteri, and are inserted or lost about the upper and external part of the pubes and groin. The Peritonæum is also reflected from the forepart of the Uterus over the upper part of the bladder: and upon the back-part of the Uterus it descends even upon the Vagina, from which it is again reflected upwards over the Rectum. By these attachments, especially the broad and round ligaments, the Uterus is kept between the Vesica Urinaria and Rectum, loofely fuspended in the Vagina, within two or three inches of the Os Externum; the Epiploon and intestines occupy the upper and fore part of the Pelvis, by which means the Uterus is preffed downwards and backwards to the lower and and concave part of the Sacrum. (See Tab. V. fig. 2.) As the Vefica Urinaria fills and stretches with Urine, the Viscera are raised: but as the bladder is emptied, they return? and this is the reason that the Os Uteri is commonly felt backwards towards the Os Coccygis. Sometimes it is found tilted to one fide; at other times forwards towards the Pubes, and the Fundus preffed low down on the back-part. The Os Uteri is also higher or lower according as the ligaments are more or less lax or tense. In coition, the Uterus yields three or four inches to the pressure of the Penis, having a free motion upwards and downwards, fo that the reciprocal ofcillation, which is permitted by this contrivance, increases the mutual titillation and pleasure. See Tab. V.

The ligaments undergo no extraordinary extension in time of uterine gestation, because they fink down two inches with the Uterus in an unimpregnated state; and when the Fundus rifes, they will be raifed, at the same time, to the height of not only these two inches, but as much more, without being stretched in the least: Besides, as the Uterus rises still upwards, the fides of it approach the Ilia, from whence the broad ligaments take their origin; and this circumstance is equal to an acquisition of three inches more: So that, upon the whole, these ligaments seem to be very little stretched,

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SECT. III. Of the OVARIA, Vessels, Ligaments, and Fallopian Tubes.

THE Ovaria are two small oval bodies, one of which is placed behind each Fallopian tube; supposed to be little more than a cluster of Ova, whence they derive their present name: for, by ancient authors, they are mentioned by the appellation of the female testicles. Each Ovarium is about one inch in length, half as broad, and one quarter of an inch in thickness; more convex on the fore than on the back part, of a smooth surface, covered with the Peritonæum. See Tab. V.

The blood-veffels are, first, the Spermatic Arteries and Veins, which have nearly the same origin as those in men, are mostly distributed upon the Ovaria and tubes, and at the upper part of the Uterus communicate with the hypogastrics; from the branches of which the body of the womb is furnished. All these arteries anastomose, and are supposed to detach small ramifications that open into the cavity of the Uterus. The veins are large, communicate one with another, with the Hæmorrhoidals and Vena Portarum, and have no valves.

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The Ligamenta Rotunda are two vascular ropes composed of veins and arteries inclosed in the duplicature of the Ligamenta Lata; seemingly arising from the crural artery and vein, from whence they are extended to the sides of the Fundus Uteri.

The nerves come from the Intercostals, Lumbares, Lumbares, and Sacri; as described in Boerhaave's Institutes, and Winslow's Anatomy.

CHAP. III.

SECT. I. Of the CATAMENIA and FLUOR AL-BUS, in an unimpregnated State.

THE Uterus, according to some, and all the parts subservient to generation, arrive at full growth about the age of sisteen: The vessels are then sufficiently dilated, and those that end in the cavity of the womb, so distended with blood, that their mouths are forced open, they empty themselves gradually, and for that time the Plethora in the Uterus

and neighbouring parts is removed.

Several ingenious theories have been crected, to account for the flux of the Menses: particularly by Doctors Friend, Simpson, and Aftruc: the two last of whom, with many others, allege, that there are finuses in the Uterus, furnished with side-vessels opening into its cavity; which finuses are gradually firetched by the blood they receive from the arteries, until the fourth or beginning of the fifth week, when the lateral vessels are forced open, and the accumulated blood evacuated into the cavity of the womb. But, if this were cafe, the same mechanism must prevail in other parts of the body, through which the like periodical discharge is made, when the Ute us is obstructed; as from the note, hairy scalp, lungs, stomach, mesenteric and hemorrhoidal veffels, and even thro' the skin of the legs, and VOL. I. other

other parts of the body. Besides, such an accumulation in large sinuses, though the blood were not entirely stagnated, would produce a viscosity like that which obtains in the rheumatism and other inflammatory distempers.

Those who live in hot climates, are frequently visited with the Menses at the age of twelve; and women who are kept warm, and live delicately, undergo this discharge earlier than those who use a different regimen: and if the catamenia do not flow at the stated time, the patient is soon after seized with the chlorosis, unless some other evacuation happens in lieu of the Menses.

They commonly cease to flow about the age of forty-five, except in those with whom they began at twelve, or in such as have born a great many children; in which case, they cease about the age of two-and-forty, or sooner.

In young people, the momentum of the circulating fluid is greater than the refilting force of the folids; so that the vessels continue to be gradually stretched, until, by their number, capacity, and length, this momentum is dissipated, so as to become no more than equal to the resistance. About this time the superplus of blood begins to be discharged, and thus the equilibrium is preserved till the age of forty-sive; when the sibres growing rigid, the incrementum is lessened, the evacuation is no longer necessary, nor has the blood force enough to make good its wonted passage into the cavity of the womb. In the same manner are produced the symptoms of old age.

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The catamenia are, therefore, no more than a periodical discharge of that superplus of blood which is collected through the month, and, towards the criss, attended with pains in the loins, breast, and head, more or less acute, according to the circumstances of the plethora; all which complaints gradually vanish

when the menses begin to appear.

This evacuation commonly continues till the fifth or fixth day, in some to the third only, and in others to the seventh: the quantity discharged being, according to Hippocrates, two beminæ; equal, by the computation of some, to eighteen or twenty, and, in the opinion of others, to twenty-four, ounces: but this must certainly be a mistake; for they rarely exceed four ounces, except when they

flow in too great quantity.

Women that are delicately kept, and plentifully fed, have this discharge more frequently, and in greater quantity, than those who are inured to much exercise, or subject to copious perspiration: yet both these constitutions may be healthy, and ought not to be tampered with by prescriptions for altreing the period or quantity of this evacuation. Indeed, if the slux be so frequent or immoderate as to exhaust the strength of the patient, it will be necessary to prescribe bleeding before the return of the period, rest, cooling and astringent medicines, not only taken internally, but likewise applied externally, and injected into the vagina. See Collect. IV. No 1. 2.

On the contrary, if they flow too feldom, in

too fmall quantity, or do not appear at all, fo that a dangerous plenitude enfues, the plethora must be lessened by plentiful bleeding and repeated purges, and the discharge solicited by warm baths, fumigation, and exercife. But if the patient has been long obthructed from a lentor, viscosity, and retarded motion of the fluids in the uterus and neighbouring parts, the fullness must be taken off by the above-mentioned evacuations, unless the constitution be already weakened: then every thing that will gradually attenuate the fluids, and quicken their circulating force, ought to be administered; such as chalybeat and mercurial medicines, together with warm bitter and stomachic ingredients, assisted with proper diet and exercise, according to the prescriptions to be found in Hoffman, Friend's Emmenologia, and Shaw's Practice of Phylic. See Collect. IV. No 2. 4.

Of the FLUOR ALBUS.

The infide membrane of the uterus, according to Astruc, is thick-set with small glands, which he calls the colatura lactea: These, in an unimpregnated uterus, separate a mucus that lubricates the cavity and canal of the neck, by which means the sides are prevented from coalescing or growing together. The Fluor Albus is no other than this mucus discharged in too great quantity from the uterus, as well as from the vagina; and this excess, when it happens from plenitude, in those who feed plentifully without taking sufficient exercise,

is often remedied by general evacuation, such as venæsection, emetics, cathartics, and a more abstemious diet, with a greater share of exercise than usual. But the cure is more difficult when the complaint is of a long standing, and proceeds from a bad habit, the constitution being weakened by the inordinate discharge: In this case, it will be necessary to use repeated emetics, gentle exercise, and all those medicines that contribute to strengthen a lax habit of body; or, if the distemper be cancerous, it must be palliated with anodynes. As to the form of prescription in all these cases, Hossman may be consulted. See Collect. IV. No 5. 6.

SECT. II. Of CONCEPTION.

THE minutiæ or first principles of bodies being without the sphere of human comprehension, all that we know is by the observation of their effects; so that the modus of conception is altogether uncertain, especially in the human species, because opportunities of opening pregnant women so seldom occur.

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Although the knowledge of this operation is not ablolutely necessary for the practice of Midwifery, an investigation of it may not only gratify the curious, but also promote farther inquiries; in the course of which, many material discoveries may be made, in the same manner as many valuable compositions in chemistry were found out in the last century by those who ex-

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ercifed themselves in search of the philosopher's stone.

From the time of Hippocrates to the fixteenth century, it was generally believed that the Embryo and Secundines were formed by the mixture of the male and female femen in the Uterus: but during the last hundred years, anatomy received great improvements by the frequent diffection of human bodies; and in some female subjects, the Fœtus was found in one of the Fallopian tubes; in others, it was discovered in the Abdomen, with the Placenta adhering to the surface of the viscera. See Collect. V.

Malphigius and others, between the years 1650 and 1690, wrote expressly upon the incubation of eggs, their formation, and the gradual increase of oviparous animals. great Harvey observed the progress of the viviparous kind, in a great number of different animals which he had opportunities of opening. De Graaf diffected near one hundred rabbits, and is very particular and accurate in the observations he had made. Ruysch, Aldes, Needham, Steno, Kerkringius, Swammerdam, Bartholine the fon, and Drelincourt, employed themselves in the same inquiries; and, in consequence of their different remarks, a variety of theories have been erected: yet all of them have been subject to many objections; and even the following, though the most probable, is still very uncertain.

When the parts in women, subservient to generation, attain their come or full growth,

one or more of the Ova being brought to mafurity, that part of the Peritonæum which covers the Ovarium begins to stretch; the nervous fibres are accordingly affected, and contract themselves so as to bring the Fimbria of the Fallopian tube in close contact with the ripe Ovum: by which mechanism, this last is foucezed out of its nidus or husk into the cavity of the tube, through which it is conveyed into the Uterus by a vermicular or peristaltic motion; and if it is not immediately impregnated with an Animalcule of the male femen, must be dissolved and lost, because it is now detached from the veffels of the Ovarium, and has no Vis Vitæ in itself.

The external coat of the Ovum is the membrane Chorion; one fourth part of which is the Placenta, supposed to be the root by which it was formerly joined to the vessels of the Ovarium; and the navel-string is no other than a continuation of the veffels belonging to

this cake.

The Chorion is on the infide fined with another membrane called Amnion; and both are kept diftended in a globular form by a clear

ferous fluid, or thin lymph.

As for the male femen, according to the observation of the celebrated Leeuwenhoek, it abounds with Animalcula, that swim about in it like so many tadpoles; and these are larger and more vigorous the longer the femen hath remained in the Veficulæ Seminales.

The parts of both male and female being thus brought to maturity, the following circumstances

cumstances are supposed to happen in coition, especially in those embraces which immediately follow the evacuation of the Menses. In the woman, the friction of the Penis in the contracted Vagina, the repeated pressure and shocks against the external parts, the alternate motion upwards and downwards of the Uterus. with its appendages, the Ovaria, Fallopian tubes, and round ligaments, produce a general titillation and turgency; in consequence of which, the nervous fibrils are convulled, and a fluid ejected from the prostate or analogous glands, as well as from those of the Uterus and Fallopian tubes. The Fimbria belonging to one of which, now firmly grasps the ripened Ovum, which at the same instant is impregnated with the male feed that in the orgafm of coition had been thrown into the Uterus, and thence conveyed into the cavity of the tube by fome abforbing or convulfive power. When the two matured principles are thus mingled, one of the Animalcula infinuates itfelf into the Ovum, and is joined with its belly to that ruptured part of it from which the navel-string is produced; or, entering one of the veffels, is protruded to the end of the Funis, by which a circulation is carried on from the embryo to the placenta and mem-The ovum being impregnated is fqueezed from its nidus or husk into the tube, by the contraction of the fimbria; and thus difengaged from its attachments to the ovarium, is endowed with a circulating force by the animalculum, which has a vis vitæ in itfelf: the vessels on the surface of the ovum being opened in consequence of its detachments from the ovarium, absorb the furrounding fluid which is fecerned by the glands in the cavity of the tube and uterus, or forced into them by motion, heat, and rarefaction, and carried along the umbilical vein for the nourishment and increase of the impregnated mafs.

Of the femen that is injected or absorbed into the uterus, part is mixed with the fluid fecreted by the glands in the canal of the neck, which is blocked up with a fort of gluten formed by this mixture; to that the Ovum is thereby prevented from finking too far down,

and being discharged.

This theory of conception, though very ingenious, and of all others the best supported with corroborating confiderations, fuch as, that Fœtuses and Embryos have been actually found in the cavity of the tube and abdomen, without any marks of exclusion from the Uterus; besides other presumptions that will be mentioned when we come to treat of the nutrition of the Fœtus; I say, notwithstanding the plausibility of the scheme, it is attended with circumstances which are hitherto inexplicable; namely, the manner in which the Animalculum gains admission into the Ovum. either while it remains in the ovarium, fojourns in the tube, or is deposited in the Fundus uteri; and the method by which the veffels of the navel-string are inosculated with those of the Animalculum. Indeed, these

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points are so intricate, that every different theorist has started different opinions concerning them, some of which are rather jocular than instructive.

SECT. III. Of the increase of the UTERUS after Conception.

It is supposed that the Ovum swims in a sluid, which it absorbs so as to increase gradually in magnitude till it comes in contact with all the inner surface of the Fundus; and this being distended in proportion to the augmentation of its contents, the upper part of

the neck begins also to be stretched.

About the third month of gestation, the ovum in bigness equals a goofe-egg; and then nearly one fourth of the neck at its upper part is distended equal with the fundus. the fifth month, the fundus is increased to a much greater magnitude, and rifes upwards to the middle space betwixt the upper part of the pubes and the navel; and at that period one half of the neck is extended. feventh month, the fundus reaches as high as the navel; at the eighth month, it is advanced midway between the navel and fcrobiculus cordis; and in the ninth month, is raised quite up to this last mentioned part, the neck of the womb being then altogether distended. See Tab. V. VI. VII. VIII.

Now that the whole substance of the uterus is stretched, the neck and os internum, which were at first the strongest, become the weakest

part of the womb, and the stretching force being still continued by the increase of the fœtus and fecundines, which are extended by the inclosed waters in a globular form, the os uteri begins gradually to give way. In the beginning of its dilatation, the nervous fibres in this place being more sensible than any other part of the uterus, are irritated and yield an uneasy sensation; to alleviate which, the woman squeezes her uterus by contracting the abdominal muscles, and at the same time filling the lungs with air, by which the diaphragm is kept down; the pain being rather increased than abated by this straining, is: communicated to all the neighbouring partsto which the ligaments and veffels are attached, fuch as the back, loins, and infide of the thighs; and by this compression of the uterus the waters and membranes are squeezed against the os uteri, which is of confequence a little more opened. See Tab. IX. X. XI. XH.

The woman heing unable to continue this effort for any length of time, from the violence of the pain it occasions, and the strength of the muscles being thereby a little exhausted and impaired, the contracting force abates; the tension of the os tincæ being taken off, it becomes more soft, and contracts a little; so that the nervous sibres are relaxed. This remission of pain the patient enjoys for some time, until the same increasing force renews the stretching pains, irritation, and something like a tensimus at the os uteri; the compression of the womb again takes place, and the internal

internal mouth is a little more dilated, either by the preffure of the waters and membranes, or, when the fluid is in small quantity, by the child's head forced down by the contraction of the uterus, which in that case is in contact with the body of the fœtus. See Tab. XII. XIII. XIV.

In this manner the labour-pains begin, and continue to return periodically, growing stronger and more frequent until the os uteri is fully dilated, and the membranes are depressed and broke; so that the waters are discharged, the uterus contracts, and, with the assistance of the muscles, the child is forced along and delivered.

Although this account may be hable to objections, especially in those cases when the child is delivered before the full time, it nevertheless seems more probable than that hypothesis which imputes the labour-pains to the motion of the child calcitrating the uterus: for it frequently happens that the woman never feels the child stir during the whole time of labour; and dead children are delivered as easily as those that come alive, except when the birth is retarded by the body's being swelled to an extraordinary size.

SECT. IV. Of the Magnitude, Weight, and different Appellations given to the OVUM and CHILD.

WHEN the ovum descends into the uterus, it is supposed to be about the size of a poppy-seed, and in the third month augmented

augmented to the bigness of a goose egg. Ten days after conception, the child (according to some authors) weighs half a grain; at thirty days, is increased to the weight of twenty-two grains; at three months, weighs betwixt two and three ounces; and at nine months, from ten to twelve, and sometimes sixteen, pounds; by which calculation it would appear that the progress of the Foetis is quickest in the beginning of its growth; for from the tenth to the thirtieth day (according to this supposition) it increases to three and forty times its weight. All these calculations are uncertain.

The conception is called an Embryo, until all the parts are dictinctly formed, generally in the third month; and from that period to delivery, is distinguished by the appellation of

rætus.

SECT. V. Of Twins.

WHEN two or more children are included in the uterus at the fame time, each has a separate placenta with umbilical cords and vessels: sometimes these Placentæ are altogether distinct, and at other

times they form but one cake.

Yet, by an instance that lately fell under my observation, it appears that sometimes twins have but one placenta in common. Whether or not they were two sets of membranes, I could not discover, because they had been tore off by the gentleman who delivered the woman: but when the artery in one of the navel-

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strings was injected, the matter flowed out at one of the veffels belonging to the other; and the communication between them is still vifible, though they are separated at the distance of three or four inches.

When two children are distinct, they are called twins; and monsters, when they are joined together; the first (according to the foregoing theory) are produced when different animalcula impregnate different ova; and the last are engendered when two or more animalcula introduce themselves, and are included in one ovum. See Tab. X.

SECT. VI. Of SUPERFORTATION.

IT was formerly imagined that a woman might conceive a fecond time during pregnancy, and be delivered of one child fome weeks or months before the other could be ready for the world: but this opinion is now generally exploded; because the ovum fills the whole fundus uteri, and the gelatinous fubstance already mentioned locks up the neck and os internum, fo as to hinder more femen from entering the womb and impregnating a fecond egg in any subsequent coition. Wherefore, in all those cases which gave rise to this fupposition, it may be taken for granted that the woman was actually with child of twins, one of which lying near the os internum, might chance to die and mortify, so as that the membranes give way, and the dead feetus is difcharged, while the other remains in the uterus and

and is delivered at the full time. On the other hand, by some accident, the first and largest may be born some days or weeks before the full time, and afterwards the os tincæ contract so as to detain the other till the due period. At other times the child that lies next to the fundus is the smallest, and sollows after the birth of the other, sometimes dead and putrissed, and sometimes in an emaciated condition. See Collect. VI.

SECT. VII. Of ABORTIONS.

A MISCARRIGE that happens before the tenth day was formerly called an effux, because the Embryo and Secundines are not then formed, and nothing but the liquid conception or genitura is discharged. From the the tenth day to the third month, it was known by the term expulsion, the Embryo and Secundines being still so small that the woman is in no great danger from violent slooding.

If the parted with her burden betwixt that period and the feventh month, the was faid to fuffer an abortion: in which case the underwent greater danger, and was delivered with more difficulty than before; because the uterus and vessels being more distended, a larger quantity of blood was lost in a shorter time, the fœtus was increased in bulk, and the neck of the womb is not yet fully stretched: besides, should the child be born alive, it will be so small and tender that it will not suck, and scarce receive any sort of nourishment.

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When delivery happens between the feventh month and full time, the woman is faid to be in labour. But, instead of these distinctions, if she loses her burden at any time from conception to the seventh or eighth, or even in the ninth month, we now say indiscriminately, she has miscarried.

Hippocrates alleges that a child born in the feventh month, fometimes lives: whereas if it comes in the eighth, it will probably die: because all healthy children, fays he, make an effort to be delivered in the feventh month; and if they are not then born, the nifus is repeated in the eighth, when the child must be weakened by its former unfuccessful attempt, and therefore not likely to live; whereas, should the second effort be deferred till the ninth, the fœtus will by that time be fufficiently recovered from the fatigue it had undergone in the feventh. Experience, however, contradicts this affertion; for the older the child is, we find it always (cateris paribus) the stronger, consequently the more hardy and eafily nursed: neither is there any sufficient reason for adhering to the opinion of Pythagoras on this subject, who declares that number eight is not so fortunate as seven or nine.

The common term of pregnancy is limited to nine folar months, reckoning from the last discharge of the catamenia: yet in some, tho very few, uterine gestation exceeds that period; and as this is a possible case, we ought always to judge on the charitable side, in the persua-

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fion that it is better several guilty persons should escape, than one innocent person suffer in point of reputation. See Collect. VII.

SECT. VIII. Of False Conceptions and Moles.

IT was formerly supposed, that if the parts I of the Embryo and Secundines were not separated and distinctly formed from the mixture of the male and female femen, they formed a mass, which, when discharged before the fourth month, was called a false conception; if it continued longer in the uterus fo as to increase in magnitude, it went under the denomination of a mola. But these things are now to be accounted for in a more probable and certain manner. Should the Embryo die (suppose in the first or second month) fome days before it is discharged, it will sometimes be entirely diffolved; fo that when the fecundines are delivered, there is nothing elfe to be feen. In the first month the Embryo is fo small and tender, that this diffolution will be performed in twelve hours; in the second month, two, three, or four days will suffice for this purpose; and even in the third month. it will be dissolved in fourteen or fifteen: befides, the blood frequently forms thick laminæ round the ovum, to the furface of which they adhere so strongly, that it is very difficult to distinguish what part is placenta, and what membrane. Even after the Embryo and placenta are discharged in the second or third month, the mouth and neck of the womb

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womb are often so closely contracted, that the fibrous part of the blood is retained in the fundus, sometimes to the fifth or seventh day; and, when it comes off, exhibits the appearance of an ovum, the external surface, by the strong pressure of the uterus, resembling a membrane; so that the whole is mistaken for

for a false conception.

This fubstance, in bigness, commonly equals a pigeon or hen egg; or if it exceeds that fize, and is longer retained, is diftinguished by the appellation of mola: but this last generally happens in women betwixt the age of forty-five and fifty, or later, when their menses begins to disappear; sometimes from internal or external accidents that may produce continued floodings. If the catamenia have ceased to flow for some time in elderly women, and return with pain, fuch a fymptom is frequently the forerunner of a cancer; before or after this happens, sometimes a large flesh-like substance will be difcharged with great pain, refembling that of labour; and, upon examination, appears to be no more than the fibrous part of the blood, which assumes that form by being long presfed in the uterus or vagina. See Collect. VIII.

In this place it will not be amifs to observe, that the glands of the Uterus and Vagina will sometimes increase and distend the adjacent parts to a surprising degree. If (for example) one of the glands of the uterus be so obstructed as that there is a pressure on the returning

vein

vein and excretory duct, the arterial blood will gradually stretch the smaller vessels, and consequently increase the fize of the gland, which will grow larger and larger, as long as the force of the impelled fluid is greater than the refistance of the vessels, that contain it; by which means a very fmall gland will be enlarged to a great bulk, and the Uterus gradually stretched as in uterine gestation, though the progress may be so slow as to be protracted for years instead of months. Nevertheless the os internum will be dilated, and the gland (if not too large to pass) will be squeezed into the Vagina, provided it adheres to the Uterus, by a fmall neck : nay, it will lengthen more and more, fo as to appear on the outside of the os externum; in which case it may be eafily feparated by a ligature. This difease will be the sooner known and easier remedied, the lower its origin in the uterus is. But should the gland take its rise in the vagina hard by the mouth of the womb, it will show itself still sooner; and a ligature may be easily introduced, provided the tumour is not so large as to fill up the cavity, and hinder the neck of it from being commodiously felt. Though the greatest difficulty occurs when the gland is confined to the uterus, being too much enlarged to pass through the os internum.

Sometimes all or most of the glands of the uterus are thus affected, and augment the womb to such a degree, that it will weigh a great many pounds, and the woman is destroyed

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stroyed by its pressure upon the surrounding parts; but should this indolent state of the tumour be altered by any accident that will produce irritation and inflammation, the parts will grow scirrhous, and a cancer ensue.

This misfortune for the most part happens to women when their menstrual evacuations leave them; and sometimes (though seldom) to child-bearing women, in consequence of

fevere labour.

Some people have affirmed that the Placenta, being left in the Uterus after the delivery of the child, grows gradually larger. But the contrary of this affertion is proved by common practice; from which it appears, that the Placenta is actually preffed into finaller dimensions, and sometimes into a substance almost demi-cartilaginous: for, after the death or delivery of the child, the Secundines receive no farther increase or growth. Dropsies and hydatides are also supposed to be formed in the uterus, and discharged from thence together with air or wind. The Ovaria are fometimes affected in the same manner, are inflamed, inposthumate, grow scirrhous, cancerous, and the patient is destroyed by the discharge which gradually fills the abdomen with pus and ichor; fo that all these complaints, if known, ought to be obviated in the beginning. See Collect. IX.

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SECT. IX. Of the PLACENTA and Membranes.

T HAVE already observed that the Ovum is formed of the Placenta with the Chorion and Amnion, which are globularly distended by the inclosed waters that furround the child. The Placenta is commonly of a round figure, fomewhat refembling an oat-cake, about fix inches in diameter, and one inch thick in the middle, growing a little thinner towards the circumference: it is composed of veins and arteries, which are divided into an infinite number of small branches, the venous parts of which unite in one large tube, called the umbilical vein, which brings back the blood, and is supposed to carry along the nutritive fluid from the vessels of the Chorion and Placenta, to the child, whose belly it perforates at the navel; from thence passing into the liver, where it communicates with the vena portarum and cava. It is furnished with two arteries, which arise from the internal iliacs of the child, and running up on each fide of the bladder perforates the belly where the umbilical vein entered; then they proceed to the Placenta, in a spiral line, twining around the vein, in conjunction with which, they form the Funiculus umbilicalis, which is commonly four or five hand-breadths in length, fometimes only two or three, and fometimes it extends to the length of eight or ten. The two arteries, on their arrival at the inner furface of the Placenta, are divided and fubdivided into minute

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minute branches, which at last end in small capillaries that inofculate with the veins of the fame order. These arteries, together with the umbilical vein, are supposed to do the fame office in the Placenta which is afterwards performed in the lungs by the pulmonary artery and vein, until the child is delivered and begins to breathe: and this opinion feems to be confirmed by the following experiments. If the child and Placenta are both delivered fuddenly, or the last immediately after the first; and if the child, though alive, does not yet breathe, the blood may be felt circulating fometimes flowly, at other times with great force, through the arteries of the Funis to the Placenta, and from thence back again to the child, along the umbilical vein. When the veffels are flightly preffed, the arteries swell between the pressure and the child, while the vein grows turgid between that and the Placenta, from the furface of which no blood is observed to flow, although it be lying in a bason among warm water. As the child begins to breathe, the circulation, though it was weak before, immediately grows stronger and stronger; and then in a few minutes the pulfation in the navel-string becomes more languid, and at last entirely stops. If after the the child is delivered, and the navel-string cut, provided the Placenta adheres firmly to the Uterus, which is thereby kept extended; or, if the womb is still distended by another child; no more blood flows from the umbilical velfels than what feemed to be contained in them at

at the instant of cutting; and this, in common cases, does not exceed the quantity of two or three ounces: and finally, when, in consequence of violent floodings; the mother expires either in time of delivery or soon after it, the child is sometimes found alive and vigorous, especially if the Placenta is sound; but if tore, then the child will lose blood as well as the mother.

The external furface of the Placenta is divided into several lobes, that it may yield and conform itself more commodiously to the inner surface of the Uterus, to which it adheres, so as to prevent its being separated by any shock or blows upon the abdomen, unless when

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Those groups of veins and arteries which enter into the composition of the Placenta, receive external coats from the Chorion, which is the outward membrane of the Ovum, thick and strong, and forms three-fourths of the external globe that contains the waters and the child; the remaining part being covered by the Placenta; fo that these two in conjunction constitute the whole external surface of the Ovum. Some indeed allege, that thefe are inveloped with a cribriform or cellular fubstance, by which they seem to adhere by contact only, to the Uterus; and that the inner membrane of the womb is full of little glands, whose excretory ducts, opening into the fundus and neck, secrete a soft thin mucus (as formerly observed) to lubricate the whole cavity of the Uterus, which beginning to stretch in

in time of gestation, the vessels that compose these glands are also distended; consequertly a greater quantity of this mucus is separated and retained in this supposed cribriform and cellular fubstance, the absorbing vessels of which take it in and convey it along the veins for the nourishment of the child. The womb being therefore distended in proportion to the increase of the child, those glands are also proportionably enlarged; by which means a larger quantity of the fluid is separated, because the nutriment of the child must be augmented in proportion to the progress of its growth; and this liquor undergoes an alteration in quality as well as in quantity, being changed from a clear thin fluid into the more viscous confistence of milk. In some cases, this mucus hath been discharged from the uterus in time of pregnancy, and both mother and child weakened by the evacuation; which may be occasioned by the chorion's adhering too loofely, or being in one part actually feparated from the womb.

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Formerly, it was taken for granted by many, that the Placenta always adhered to the fundus uteri. But this notion is refuted by certain observations; in consequence of which we find it as often sticking to the sides, back, and fore parts, and sometimes as far down as the inside of the os uteri. See Tab. V. VI.

VIII. IX. X. XI. XIII.

When the Placenta is delivered, and no other part of the membrane tore except that through which the child passed, the opening is generally

generally near the edge or fide of the placenta, and feldom in the middle of the membranes; and a hog's bladder being introduced at this opening, and inflated, when lying in water, will show the shape and size of the inner surface of the womb, and plainly discover the part to which the placenta adhered.

The Chorion is, on the infide, lined with the Amnion, which is a thin transparent membrane, without any vessels so large as to admit the red globules of blood: It adheres to the chorion by contact, and seems to form the external coat of the funis umbilicalis.

This membrane contains the ferum, in which the child swims; which sluid is supposed to be furnished by lymphatic vessels that open into the inner surface of the amnion. If this liquid is neither absorbed into the body of the setus, nor taken into the stomach by suction at the mouth, there must be absorbing vessels in this membrane, in the same manner as in the abdomen and other cavities of the body, where there is a constant renovation of humidity.

The quantity of this fluid, in proportion to the weight of the fœtus, is much greater in the first than in the last month of gestation being in the one perhaps ten times the weight of the embryo, whereas in the other it is commonly in the proportion of one to two: for fix pounds of water surrounding a fœtus that weighs twelve pounds, is reckoned a large proportion, the quantity being of-

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ten much less; nay, sometimes there is very little or none at all.

In most animals of the brute species, there is a third membrane called allantois, which resembles a long and wide blind-gut, and contains the urine of the sœtus. It is situated between the chorion and amnion, and communicates with the urachus that rises from the fundus of the bladder, and runs along with the umbilical vessels, depositing the urine in this reservoir, which is attached to its other extremity. This bag hath not yet been certainly discovered in the human sætus, the urachus of which, though plainly perceivable, seems hitherto to be quite impersorated.

From the foregoing observations upon nutrition, it seems probable, that the fœtus is rather nourished by the absorption of the nutritive sluid into the vessels of the placenta and chorion, than from the red blood circulated in sull stream from the arteries of the uterus to the veins of the placenta, and returned by the arteries of the last to the veins of the first, in order to be renewed, refined, and made arterial blood in the lungs of the mother.

Yet this doctrine of absorption is clogged with one objection, which hath never been fully answered; namely, That if the placenta adheres to the lower part of the uterus, when the os internum begins to be dilated a flooding immediately ensues; and the same symptom happens upon a partial or total separation of the placenta from any other part of the womb;

whereas

whereas no fuch confequence follows a fepara-

The new theorists indeed observe, that there is no necessity for a supply of red blood from the mother; because the circulating force in the vessels of the fœtus produces heat and motion sufficient to endue the fluids with a fanguine colour; that neither is there occafion for returning and refining this blood in the lungs of the mother, because that office is fufficiently performed in the placenta, until the fœtus is delivered, when its own lungs are put to their proper use; and lastly, that the blood of the mother is too gross a fluid to answer the occasions of the fœtus. Certain it is, the chick in the egg is nourished by the white which is forced along the veffels, and the quantity of red blood increases in proportion to the growth of the contained embryo or fœtus, without any supply from the hen. Dilandudo ii

On the whole, the opinions broached upon the nutrition of the embryo and fœtus in utero have been various, as well as those that are adopted concerning the modus of conception.

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BOOK II.

CHAP. I.

Of the Diseases incident to pregnant Women; being either such as immediately proceed from Pregnancy, or such as may happen at any other Time; and, if not carefully prevented or removed, may be of dangerous Consequence both to Mother and Child.

SECT. I. Of NAUSEA and VOMITING.

HE first complaint attending pregnancy, is the nausea and vomiting, which in some women begins soon after conception, and frequently continues till the end of the fourth month. Most women are troubled with this symptom more or less, particularly vomiting in the morning: some who have no such complaint in one pregnancy, shall be violently attacked with it in another; and in a few it prevails during the whole time of uterine gestation.

The vomiting, if not very violent, is feldom of dangerous consequence; but, on the contrary, is supposed to be serviceable so the patient, by unloading the stomach of superstuous nourishment, thereby carrying off or prevent-

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Sect. I.

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ing too great a turgency in the veffels of the viscera and uterus; and by creating a kind of straining or nifus in the parts, which will affift the fundus and neck of the womb in stretching. Nevertheless, if the straining is too great, it may endanger a miscarriage.

Perhaps this complaint is chiefly occasioned by a fulness of the vessels of the uterus, owing to obstructed catamenia, the whole quantity of which cannot as yet be employed in the nutrition of the embryo: over and above this cause, it has been supposed that the uterus being stretched by the increase of the ovum; a tension of that part ensues, affecting the nerves of that viscus, especially those that arise from the sympathetici maximi, and communicate with the plexus at the mouth of the stomach. Whatever be the cause, the complaint is best relieved by blooding, more or less, according to the plethora and strength of the patient; and if the is costive, by emollient glysters and opening medicines, that will evacuate the hardened contents of the colon and rectum; fo that the viscera will be rendered light and eafy, and the stretching fullness of the veffels taken off. A light, nutritive, and spare diet, with moderate exercise, and a free openair, will conduce to the removal of this complaint. See Collect. X. Nº 1. well hoof share to the pold four

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SECT. II. Of the Difficulty in making Water; Cofliveness; Swelling of the Hamorrhoids, Legs, and Labia Pudendi; and the Dyspnæa and Vomiting at the latter end of Pregnancy.

OWARDS the end of the fourth month, or beginning of the fifth, the uterus is fo much distended as to fill all the upper part of the pelvis, and then begins to rife up. wards into the abdomen; about the same time the os internum is likewife raifed and turned backwards towards the facrum, because the fundus is inclined forwards in its rife. The uterus, according to the different directions in which it extends, produces various complaints by its weight and preffure upon the adjacent parts, whether in the pelvis, or higher in the abdomen. In the fourth or fifth month, it presses against the sphinder of the bladder in the pelvis, and produces a difficulty in making water, and fometimes (though feldom) a total suppression. This complaint will happen, if the womb is funk too low in the vagina; or if the ovum, inflead of adhering to the fundus, descends into the wide part in the middle of the neck, which accordingly first undergoes distention This disposition of the ovum is frequently the cause of abortion, because the mouth and neck being in this case, from the stretching the weakest parts of the uterus, the os internum begins to be opened too foon: yet fometimes this will continue strong and rigid; and after the neck is enlarged, the fundus

will be, last of all, stretched till the end of gestation, and the woman be happily delivered *.

But, as the stretching begins lower down in this than in a common case, the uterus muse confequently press against all parts of the pelvis before it can rise above the brim; and this pressure fometimes produces an obstruction of urine and difficulty in going to stool: the general compression of all these parts will be atttended with a degree of inflammation in the substance of the uterus, the vagina, mouth of the bladder, and rectum; from whence violent pains and a fever will enfue. In order to remove or alleviate these symptoms, recourse must be had to bleeding and glysters, the urine must be drawn off by the catheter, fomentations and warm baths be used, and this method occasionally repeated until the complaints abate; and they commonly vanish in consequence of the womb's rising higher, so as to be supported on the brim of the pelvis. See Collect. X. No 2, and Tab. VI. f. 2.

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By the pressure of the uterus upon the upper part of the rectum and lower part of the colon, where it makes semicircular turns to the right and lest, the seces are hindered to pass, and by remaining too long in the guts are indurated, the fluid parts being absorbed.

Hence

^{*} This is one probable reason to account for the PLA-CENTA's sometimes adhering over the inside of the mouth of the womb, and helps to support the theory of the neck's turning shorter and shorter as the full time approaches.

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Hence arise violent straining at stool, and a compression of the womb, which threatens abortion. When the patient, therefore, has laboured under this fymptom for feveral days, let emollient, laxative, and gently stimulating glysters be injected. But if the redum be so obstructed as that the injection cannot pass, suppositories are first to be introduced: for frequently, when the colon and rectum are compressed by the uterus, the peristaltic motion is weakened and impeded, fo that the guts cannot expel their contents; in which case, the suppository, by irritation, quickens this faculty, and in diffolving lubricates the parts, thereby facilitating the discharge of the hardened fæces. This previous measure being taken, a glyffer ought to be injected, in order to diffolye the collected and indurated contents of the colon, as well as to lubricate and stimulate the inside of that intestine, so as to effect a general evacuation; and for this purpose, a syringe should be used instead of a bladder, that the injection may be thrown up with greater efficacy and force.

These glysters ought to be repeated until the hardened fæces are altogether brought away, and the last discharge appear to be of a foft confiftence: neither ought the prescriber to trust to the reports of the patients or nurse, but to his own senses, in examining the effects of these injections; for, if the complaint hath continued several days, a large quantity of indurated fæces ought to be difcharged. To avoid fuch inconvenience for

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the future, an emollient glyster must be injected every fecond night; or, if the patient will not fubmit to this method, which is certainly the easiest and best, recourse must be had to those lenients mentioned at the latter end of this fection: for when the fæces are long retained, the air rarifies, expands, and firetches the colon, producing severe colicpains; this being the method followed by nature, with a view to disburthen herself when the is thus encumbered. See Collect. X. No and Tab. VI. f. 2.

The pressure of the uterus upon the hæmorrhoidal and internal Iliac veins, produces a turgency and tumefaction of all the parts? below, fuch as the pudenda, vagina, anus, and even the os internum, and neck of the womb. This tumefaction of the hæmorrhoidal veins, appears in those swellings at the infide and outfide of the anus, which are known by name of the external and internals hæmorrhoids, or piles. This is a complaint to which women are naturally more subject than the other fex: but it is always more violent in time of pregnancy, when the same method of cure may be administered as that practifed at other times, though greater caution must be used in applying leeches to the parts; becanse, in this case, a great quantity of bloods may be loft before the discharge can be restrained. See Collect. X. Nº 3.

About the latter end of the fifth or in the beginning of the fixth month, the uterus being stretched bove the brim, and the fun-

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dus raised to the middle space betwixt the os pubis and navel, is considerably increased in weight; and even then (though much more so near the full time) lies heavy upon the upper part of the brim, presses upon the vertebræ of the loins and ossa ilia, and, rising still higher with an augmented force, gradually stretches the parietes of the abdomen, pushing the intestines upwards and to each side.

The weight and pressure on the external iliac veins are attended with a surcharge or full-ness in the returning vessels that come from the feet, legs, and thighs; and this tumefaction produces cedematous and inflammatory swellings in these parts, together with varicous tumours in the veins, that sometimes come to

fuppuration.

The same weight and pressure oceasion pains in the back, belly, and loins, especially towards the end of the eighth or in the ninth month: it the uterus rises too high, a dispnæa or dissiculty of breathing, and frequent vomitings, ensure the first proceeds from the consincment of the lungs and diaphragm in respiration, the liver and viscera of the abdomen being forced up into the thorax; and the last is occasioned by the extraordinary pressure upon the stomach. See Collect. X. No 4.

All the complaints above described, namely, swelling of the legs, thighs, and labia pudendi, pains in the back, loins, and belly, with dyspnæa and vomiting, are removed or palliated by the following method. The patient, if she can bear such evacuations, is gene-

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rally relieved by bleeding at the arm or ankle, to the amount of eight or ten ounces; but the quantity must be proportioned to the emergency of the case: the belly must be kept open and easy with emollient glysters and laxative medicines, fuch as a spoonful or two of a mixture composed of equal parts of Ol. Amyed. d. and Syr. Violar. taken every night; or from two drachms to half an ounce of manna, or the fame quantity of lenitive electuary; a small dose of rhubarb, or five grains of any opening pill, unless the patient be troubled with the hæmorrhoids, in which case all aloetic medicines ought to be avoided: the patient must not walk much, or undergo hard exercise; but frequently rest upon the bed, and lie longer than usual in the morning. When the fwelling of the legs is moderate, and only returns at night, rollers or the laced flocking may be ferviceable; but when it extends in a great degree to the thighs, labia pudendi, and lower part of the belly, in a woman of a full habit of body, venæfection is necessary, because this cedematous swelling proceeds from a compression of the returning veins, and not from laxity, as in the anafarca and leucophlegmatic constitutions: here moderate exercise, and (as I have already obferved) frequent resting on a bed or couch, is beneficial; or if the fkin of the leg and pudenda is excessively stretched, so as to be violently pained, the patient will be greatly relieved by puncturing the parts occasionally: but these complaints cannot be totally removed E 6 till

till delivery, after which they commonly vanish of themselves.

The bellies of those that are indolent and use no exercise ought to be moderately compressed, so that the uterus may not rise too high, and occasion dissiculty in breathing, and vomiting, in the last months; but they must not be too straitly swathed less the womb should be determined, in stretching over the pubes, and produce a pendulous belly, which is often the cause of dissicult labours. A medium ought, therefore, to be preserved in this article of compressing, and no woman lace her jumps or stays so as to make herself uneasy; while the diet, air, and exercise, ought to be regulated according to the constitution, custom, and complaints of the patient.

CHAP. II.

DISEASES incident to Pregnant Women.

SECT. I. Of the STONE in the KIDNEYS and BLADDER.

fmall stones and gravel in the kidneys, being less subject than men to this complaint in the bladder, because their urethras are short and wide, and suffer the calculous concretions to pass with the urine more easily.

In pregnancy, it is often difficult to diffinguish gravelly pains from those that are felt in the small of the back and loins proceeding

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from the pressure of the uterus upon these parts. In both cases, when the pains are violent, the urine is high-coloured; and the difference is, that in the gravel a quantity of fand generally falls to the bottom: though the sediment commonly deposited by high-coloured urine is often mistaken for gravel; a mistake, however, which is the less material, because both complaints are relieved by the same method, namely, venæsection, emollient glysters, emultions, with gum arabic, insusions of althea, sem. lini, and opiates, and an application of emplast. roborans to the back.

Pains in the loins and belly, extending to the falle ribs, occasioned by the stretching of the uterus, are eased by rubbing and anointing the parts every night, before the fire, with emollient unguents, such as that of al-

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In pregnant women, the complaints from a stone in the bladder (which is sometimes, though feldom, the case) are to be treated in the same manner as at any other time; except: that, when the patient is near delivery, it is not advisable to endeavour to extract it, lest the operation should be attended with an inflammation of the urethra and vagina. If therefore the stone should be rough, angular, or furrounded with sharp prickles, the woman fuffers greatly from the preffure of the uterus upon the bladder, especially in time of labour, when the membranes are broke, and the head of the child is pushed into the upper part of the Pelvis; because the stone is then preffed pressed before it, upon the neck of the bladder, so as to occasion exquisite torture, and infallibly retard the labour-pains. If the stone hath descended into the meatus urinarius, perhaps it may be easily extracted: but if it still remains within the bladder, the only way of relieving the patient is by introducing a catheter, also one or two singers in the vagina, to push up the stone above and behind the head of the child; or, if this cannot be done, to turn and deliver by the feet, before the head is pressed too far down in the Pelvis. See Collect. XI. No 1.

SEGT. II. Of HERNIAS, or RUPTURES.

XTOMEN are also afflicted with ruptures in different parts, such as the navel, groin, and pelvis: but, as the uterus in time of gestation stretches higher and higher, the omentum and intestines are pressed more and more upward and to each fide; and about the fifth or fixth month, the womb rifes so high, that the intestine cannot descend into the groin, and the rupture in that part ceases for the present. About the eighth month, the uterus is so high advanced, that the intestine or epiploon is kept from pushing out at the navel, confequently the umbilical hernia is likewise suspended till after delivery; but this will not happen in either case, unless the tupture be of that kind which fuffers the omentum and intestine to be easily reduced. Women are chiefly subject to ruptures of

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the umbilicus, and those of the groin most incident to the other fex; but there is a third kind peculiar to women, though it rarely happens even in them: this is produced from the intestine falling down betwixt the back-part of the uterus and vagina, and the fore-part of the rectum. The peritonæum descends much lower in this place than at the anterior descent, where it covers the upper part of the bladder, or at the fides of the pelvis, where it forms the ligamenta lata; for it reaches to within one or two inches of the perinæum; and the intestines pressing it farther down, or bursting it in this part, are pushed out in the form of a large tumour, at the fide of the perinæum, betwixt the lower part of the ischium and coccyx. The gut being fo fituated in time of labour, when the child's head is squeezed into the pelvis, may fuffer strangulation, if the case should prove lingering and tedious, and the pressure continue for any length of time. In order to prevent or remedy this accident, let the os externum be gradually opened with the hand, which being introduced in the vagina, should raise the child's head, so as to suffer the intestine to be pushed above it, by the affistance of the other hand, which presses upon the outfide: in this manner, both hands may be used alternately, till the purpose be effected; or, should this method fail to reduce and retain the intestine, the child must be delivered with the forceps, or turned and brought by the feet, as we have directed in the case of a stone in in the bladder. The ruptures of the umbili-

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cus and groin may be restrained and kept up by proper compression, but it is very difficult to contrive an effectual bandage for the descent in the perinæum. See Collect. XI. No 2.

SECT. III. Of DROPSIES.

IFFICULTY in breathing, in pregnant women, may be occasioned by collections of matter in the cheft or thorax, as well as in the abdomen, from abfceffes in the vifcera, co-operating with the preffure of the uterus upon the organs of respiration: these complaints (which are generally fatal) must be treated by the fame method in pregnancy which is used at other times. The cavity of the abdomen is also subject to an aseites or dropfy, with or without hydatides, which, in conjunction with the stretching uterus, may diffend the belly to a prodigious fize, producing great oppression and anxiety. Here, too, the common method of curing or palliating. dropfies must be used; with this difference, that the purging medicines are to be cautiously prescribed. See Collect. XI. Nº 3.

But this diforder is not so incident to pregnant women, as the anafarea; which is a dropfy of the cellular membrane, that extends over the whole furface of the body, inveloping every individual muscle, vessel, and fibre. This difease is the effect of universal laxity and weakness, and, if not timely obviated, may endanger the paitent's life, being sometimes attended with a fatal rupture of the uterus in

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time of labour: in order to prevent which catastrophe, every thing ought to be prescribed in point of diet, medicine, and exercise, which may contribute to strengthen the solids and quicken the circulation. Let her, for example, take repeated doses of the confest. cardiac. drink moderate quantities of strong wine, in which the warm spices have been insused, eat no meat but such as is roasted and high-seasoned, and abstain altogether from weak diluting sluids, such as small-beer and water.

SECT. IV. Of Incontinence of Urine and Difficulty in making Water, at the latter End of Pregnancy, and in Time of Labour.

THE vesica urinaria, in pregnant women near their full time, is often so much pressed by the uterus, that it will contain but a very small quantity of water: a circumstance, though not dangerous, extremely troublesome, especially when attended with a vomiting or cough; in which case, the straining forces out the water involuntarily, with great violence. The cough may be alleviated by proper remedies, but the vomiting can feldom be removed. Sometimes a bandage applied round the lower part of the belly, and supported with the scapular, is of singular service, particularly when the uterus lies pendulous over the os pubis, thereby compreffing the urinary bladder.

But this complaint is not of fuch dangerous confequence as a difficulty in making water,

or a total suppression which (as we have already observed) happens, though very seldom. in the fourth or in the beginning of the fifth month of pregnancy; but most frequently occurs in the time of labour, and after delivery. In the beginning of labour, before the membranes are broke, and the head of the childfunk into the passage, the woman commonly labours under an incontinence of urine from the preffure upon the bladder: but the membranes being broken, and the waters discharged, the uterus contracts, and the child's head is forced down into the pelvis, where, if it continues for any length of time, the urethra and sphincler vesicæ are so compressed that the urine cannot pass; while the pressure on the other parts of the bladder being removed in confequence of the diminished fize of the uterus and the laxity of the parietes of the abdomen, the vesica urinaria is the more easily stretched by the increasing quantity of urine, which di-stends it to such a degree, that the sibres are overstrained: and after delivery, when the pressure is removed from the sphincter and meatus urinarius, it cannot contract fo as to discharge its contents, especially if any swelling or inflammation remains from the preffure upon the neck and urethra; in which case, the patient is afflicted with violent stretching pains in the loins, back, groin, and particularly above the os pubis.

This complaint is immediately removed by drawing off the urine with a catheter; and indeed this expedient ought to be tried before delivery.

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delivery, as it must infallibly promote labour, because one pain interferes with the other. If the inflammation continues or increases, and the obstruction of urine recurs after delivery, the external parts ought to be fomented with warm stupes; bladders half filled with warm water or emollient decoctions may be applied, as hot as the patient can bear them, to all the lower part of the belly; and the catheter be used twice a-day, or as often as necessity requires, until the bladder shall have recovered its tone, so as to perform its office without assistance.

SECT. V. Of the FLOUR ALBUS in pregnant Women.

one some statement of the Ha THIS discharge, to which women are I more subject at other times than during uterine gestation, if in a large quantity, may may hinder conception. In those who are usually troubled with it, the complaint generally ceases all the time of pregnancy: In fome, however, it continues to the last, provided the feat of it is in the vagina: and the evacuation is fometimes fo great as to weaken both mother and child, and even to produce a miscarriage. Every thing that strengthens and nourishes the body is here of service. This is also supposed to happen, when, some part of the chorion being separated from the uterus, the fluid that is separated by the colatura lactea for the nutrition of the fœtus forces its way through the os internum; and the

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the greater this separation is, and the nearer the full time, the larger the discharge will be.

SECT. VI. Of the GONORRHOEA and LUES VENEREA.

PHOUGH women are not fo foon infected with this distemper as men, they are commonly cured with greater difficulty, because of the great moisture and laxity of the parts affected; especially in pregnant women, who nevertheless are to be treated in the same method as practifed at other times, except that in this cafe mercurials and cathartics ought to be very cautiously used; for if the gonorrhæa be neglected or unskilfully managed, the virus will increase, and actually degenerate into a confirmed pox. It is often difficult to distinguish a gonorrheea from the fluor albus, because the colour and quantity of the discharge is nearly the same in both: in the last, however, we feldom meet with inflammation or ulcers within the labia or entrance of the vagina; whereas in the first, these generally appear, foon after the infection, about the meatus urinarius, the carunculæ myrtiformes, and infide of the labia, producing a violent pain in making water. The gonorrhoea is likewise distinguished from the fluor albus by its continuing all the time of the menstrual discharge, during which the other complaint is commonly fuspended; but this mark is at best but uncertain, and can be of no fervice in pregnancy, because then the menses thema

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themselves are obstructed. The cure is best attained by bleeding; repeated doses of gentle cathartics, mixed with mercurials; a low diet; emulsions impregnated with nitre; and lastly, balsamic, strengthening, and astringent medicines.

If the distemper hath proceeded to an inveterate degree of the fecond infection, attended with cancerous ulcerations of the pudenda, buboes in the groin, ulcers in the nofe and throat, fo that the life of the patient or constitution of the parts are endangered, mercurials must be given, so as to raise a gentle degree of falivation; which ought to be immediately restrained, and even carried off, by mild purgatives, and renewed occasionally, according to the strength of the woman, until the virus be utterly discharged. Here, however, a great deal must depend upon the judgeand discretion of the prescriber, who, rather than propose any thing that might occasion abortion, ought to try, by palliating medicines, to alleviate and keep under the symptoms till after delivery. See Collect. XI. Nº 4.

CHAP. III.

of Miscarriages.

MOST of the complaints above described, if violent and neglected, may occasion a miscarriage; and it would be almost an endless task to enumerate every accident from which

which this misfortune may proceed. I shall therefore content myself with describing in what manner abortion happens: first, in the death of the child; secondly, in the separation of the placenta; and lastly, in whatever may occasion too great extension of the neck and of the os internum.

SECT. I. Of the CHILD's Death.

THIS may proceed from difeafes peculiar to itself not to be accounted for, as well as from divers accidents that befall it in the womb. If, for example, the navel-string be long, and the quantity of furrounding waters great, the fœtus, while young, may in fwimming form a noofe of the funis; through which if the head only passes, a circumvolution will happen round the neck or body; but should the whole fœtus pass or thread this noose, a knot will be formed on the navel-string, which, if tight drawn, will absolutely obstruct the circulation. This may likewise be the case when the waters are in very small quantity, and the funis umbilicalis falls down before the head, by which it is violently compressed. In short, the death of the fœtus will be effected by all circumvolutions, knots, or pressure upon the navel-string, which destroy the circulation betwixt the placenta and the child.

The fœtus may suffer death from diseases and accidents that happen to the mother; from violent passions of joy, fear, or anger, suddenly raised to such transports as occasion tre-

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mors, fainting, or convultions; and from a plethora, and all acute distempers in which the circulating force of the fluids is too vio-

The child being dead, and the circulation in the fecundines confequently destroyed, the uterus is no longer stretched; the fætus, if large, is no longer felt to move or stir; all the contained parts run gradually into a state ofputrefaction; the relistance of the membranes becomes weaker than the contracting force of the uterus, joined with the pressure of the contents and parietes of the abdomen; the contained waters of consequence burst thro their mortified inclosure; and the uterus is contracted close to its contents, which are therefore pressed down lower and lower; the neck and mouth of the womb being gradually firetched, labour comes on, and a miscarriage enfues.

At other times, gripings, loofeness, and labour-pains, even before the membranes break, are occasioned by obstruction or resistance of the vessels of the uterus. In these cases, if no flooding happens, the woman is feldom in danger; and, though the child is known to be dead, the progress of nature is to be waited for with patience. If the woman is weak, exhausted, or timorous, she must be encouraged and fortified with nourishing diet; if plethoric, she must undergo evacuation by bleeding and laxative medicines; and when abour begins, be affifted according to the directions

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directions specified in the sequel. See Collect. XII. No 1.

SECT. II. Of the Separation of the PLACENTA from the UTERUS.

THIS separation may proceed from all the foregoing diseases and accidents that happen to the mother: from violent shocks, strains, over-reachings, falls, and bruises on the abdomen; as also from vehement coughs, vomitings, or strainings at stool when the body is costive. The separation of the placenta is always accompanied with a discharge of blood from the vessels of the uterus, more or less, according to the term of pregnancy, or as the placenta is more or less detached.

This discharge is distinguished from the menses by the irregularity of its period, by its slowing in a larger quantity, and, after a small intermission, its return upon the least

motion of the patient.

The younger the woman is with child, the danger is the lefs; because, though a considerable quantity of blood be lost, it does not flow with such violence as to exhaust her immediately; and therefore she may be supported and her spirits kept up with proper cordials and nutritive diet. But when such an hæmorrhagy happens in any of the three or four last months of pregnancy, the danger is much more imminent, especially towards the full time; because the vessels of the uterus being

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being then largely diffended, a much greater quantity of blood is loft in a fhorter time: yet in both cases, the floodings will be more or less, as there is more or less of the placenta feparated from the womb; and when this happens in a very small degree, the discharge may, by right management, be fometimes stopped, and every thing will happily proceed to the full time. But if this purpose cannot be effected in a woman young with child, the principal intention ought to be a mitigation of the hæmorrhagy, leaving the rest to time and patience, as a miscarriage in the first five months is feldom attended with hazard. On the contrary, nothing can be more dangerous than fuch an effusion in any of the four last months, provided it cannot be immediately restrained. In this case we are often deceived by a short intermission, occasioned by coagulated blood that locks up the mouth of the womb, which being pushed off, the flooding returns: and hence we account for its returning fo commonly upon motion, a fit of coughing, straining at stool, or any effort whatever.

It is happy for the woman in this case when she is so near the full time that she may be fultained till labour is brought on; and this may be promoted, if the head prefents, by gently stretching the mouth of the womb, which being fufficiently opened, the membranes must be broke: so that the waters being evacuated, the uterus contracts, the flooding is restrained, and the patient safely deli-Vol. I. vered.

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vered. At any rate, if the hæmorrhagy returns again with great violence, there is no other remedy than that of delivering with all expedition according to the method described in Book III. chap. iv. sect. 3. and Book IV.

chap, i. fect. 3.

Although the great danger is from floodings when near the full time, yet, if labour can be brought on, the os uteri is easily dilated with the labour or the hand; but in the fixth or feventh month, it takes longer time, and is stretched with greater difficulty, which is sometimes the occasion of the danger at that period.

The edge or middle of the placenta sometimes adheres over the inside of the os internum, which frequently begins to open several weeks before the full time; and if this be the case, a slooding begins at the same time, and seldom ceases entirely until the woman is delivered: the discharge may indeed be intermitted by coagulums that stop up the passage; but when these are removed, it returns with its former violence, and demands the same treatment that is recommended above.

In all cases and at all times of pregnancy, if the woman receives any extraordinary shock either in mind or body; if she is attacked by a violent fever, or any complaints attending a plethora; bleeding ought always to be prescribed by way of prevention or precaution, unless a low, weak, lax habit of body renders such evacuation unadvisable; but these are not so subject to severs from sulness.

On the first appearance of flooding, the patient ought immediately to be blooded to the amount of eight or twelve ounces, and venæfection repeated occasionally according to the strength of the constitution and emergency of the case. She ought to be confined to her bed, and be rather cool than warm. If costive, an emollient glyster must be injected in order to dissolve the hardened fæces, that they may be expelled eafily without straining: internally, mulfion with nitre must be used, and mixtures of the Tinct. Rofar. Rub. acidulated with spirits of vitriol, as the cooling or restringent method shall seem to be indicated; but above all things, opiates must be administered to procure rest, and quiet the uneasy apprehensions of the mind: For diet, let her use panada, weak broth, and rice-gruel; the may drink water in which a red-hot iron has been feveral times quenched, mixed with a small proportion of red burnt wine; she must abstain from all the high-seasoned foods, and even flesh-meat or strong broths, that will inrich the blood too fast, and quicken the circulation. But if, notwithstanding this regimen, the flooding shall continue and increase, for that the patient becomes faint and low with loss of blood; we must without further delay attempt to deliver her, as in Book III, chap, ix. fect. 2. though this is feldom practicable, except in the last months of pregnancy, and then will be the easier performed the nearer he is to her full time, unless labour-pains has been to about in Faz 5 a termin blin shall

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On the first appearance of flooding, the patient ought immediately to be blooded to the amount of eight or twelve ounces, and venæfection repeated occasionally according to the strength of the constitution and emergency of the case. She ought to be confined to her bed, and be rather cool than warm. If costive, an emollient glyster must be injected in order to dissolve the hardened fæces, that they may be expelled easily without straining: internally, mulfion with nitre must be used, and mixtures of the Tinet. Rofar. Rub. acidulated with spirits of vitriol, as the cooling or refiringent method shall seem to be indicated; but above all things, opiates must be adminiflered to procure rest, and quiet the uneasy apprehensions of the mind: For diet, let her use panada, weak broth, and rice-gruel; the may drink water in which a red-hot iron has been feveral times quenched, mixed with a small proportion of red burnt wine; she must abstain from all the high-seasoned foods, and even flesh-meat or strong broths, that will inrich the blood too fast, and quicken the circulation. But if, notwithstanding this regimen, the flooding shall continue and increase; for that the patient becomes faint and low with loss of blood; we must without further delay attempt to deliver her, as in Book III, chap, ix. fect, 3. though this is feldom practicable, except in the last months of pregnancy, and then will be the easier performed the nearer he is to her full time, unless labour-pains Las Book to she id to F 2 is a count Lin hall shall have assisted or begun a dilatation of the os internum: e ad est destillamma angue ana

SECT. III. Of COUGHS, VOMITINGS, &c.

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MISCARRIAGES may also be produced from every force that will stretch the neck and mouth of the womb; fuch as violent coughs, vomitings, coffive strainings at stool. cathartics that bring on a fuperpurgation and tenesmus, together with frequent conversions. All these symptoms must be treated in the ufual method: the cough and vomiting may be abated or removed chiefly by venælection and opiates; the constipation, by glysters and gentle laxative medicines; the fuperpurgation, by opiates; the tenefmus, by these and oily injections; the convultions, by blooding and blifters; and as the more violent convulsions happen generally when the woman is near her full time, if they are not foon removed, but continue and increase to the manifest hazard of the patient's life, she ought to be delivered immediately in the fame manner as in the case of a flooding in the last months. See Collect. XII. No 2.

SECT. IV. Of Longings.

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BORTION may be likewise occasioned by uncommon longings for things that cannot be foon or eafily got, or fuch as the woman is ashamed to ask for, especially in her first child, namely, different kinds of food and drink.

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drink. These appetites, if not gratified, sometimes produce a miscarriage; and indeed are supposed to affect the child in such a manner, that the body of it shall be impressed with marks refembling the figure or colour of what the mother longed for. These cravings, therefore, though they appear unreasonable and improper, must be satisfied; and the mother ought to shun every thing that is disagreeable to the fenses, because miscarriage may also proceed from furprife at fight of strange and horrible objects. See Collect. XII. No 3.

OOK III.

CHAP. I.

SECT. I. Of the Child's Situation in the Uterus:

HE embryo or fœtus, as it lies in the uterus, is nearly of a circular or rather oval figure, which is calculated to take up as little space as possible. The chin rests upon the breast; the thighs are pressed along the belly; the heels applied to the breech; the face being placed between the knees; while the arms crois each other round the legs. The head for the most part is down to the lower part of the uterus; and, the child being contracted into an oval form, the greatest length is from head to breech: but the distance from one

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fide to the other is very much less than that from the fore to the back part; because the thighs and legs are doubled along the belly and stomach, and the head bended forwards on the breast. The uterus being confined by the vertebræ of the loins, the distance from the back to the fore part of it must be less than from side to side; so that in all probability, one side of the fœtus is turned towards the back and the other to the fore part of the womb: but as the back-part of the uterus forms a little longish cavity on each side of the vertebræ, the fore-parts of the fœtus may therefore, for the most part, tilt more backwards than forwards.

It has been generally supposed that the head is turned up to the fundus, and the breech to the os uteri, with the fore-parts towards the mother's belly; and that it remains in this fituation till labour begins, when the head comes downwards, and the face is turned to the back of the mother. Some allege, that the head precipitates about the end of the eighth or beginning of the ninth month, by becoming specifically heavier than the rest of the body. Others affirm, that as the child increases in bulk, especially during the two last months, the proportion of furrounding water must be diminished so as that it is confined in its motion, and in struggling to alter its position the head is moved to the os tince, where it remains till delivery. The particulars of this and other theories, may be found in Mariceau, Le Motte, Simpson, and Old. But

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But from the following observations it seems more probable, that the head is for the most part turned down to the lower part of the uterus, from conception to delivery.

In the first month, according to some writers, the embryo exhibits the figure of a tadpole, with a large head and small body or tail, which gradually increases in magnitude. till the arms and thighs begin to bud or ftrut out, like fmall nipples, from the shoulders and breech; two black specks appear on each fide of the head, with a little hole or opening between them, which, in the fecond month, are eafily diffinguished to be the eyes and mouth. (See Tab. V. Fig. 3.) The legs and arms are gradually formed, while the body turns larger, but the fingers are not separated or diffinct, till the later end of the fecond or beginning of the third month. (See Tab. VI. Fig. 1.) This is commonly the case; but fometimes the bulk and appearance differ confiderably in different embryos of the fame age. The younger the embryo, the larger and heavier is the head in proportion to the rest of the body; and this is the case in all the different gradations of the fœtus; fo that, when dropt or fuspended by the navel-string in water, the head must fink lowermost of course. Besides, when women miscarry, in the fourth, fifth, fixth, and seven months, the head, for the most part, presents itself, and is first delivered. (See Tab. VI. VIII.) By the touch in the vagina, the head is frequently felt in the seventh, sometimes in the fixth, but more fre-

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frequently in the eighth month; and if the fame women are thus examined from time to time till the labour begins, the head will always be felt of a round firm substance at the fore-part of the brim of the pelvis, betwixt the os internum and pubes, through the fubstance of the vagina and uterus. (See Tab. IX. XI.) But all these opinions are liable to objections. If the descent of the head proeceded from its specific gravity, we should always find it at the os internum, because this reason would always prevail: if it were not owing to a diminished proportion of water, why should we often find the breech presented, even where there is a quantity of that fluid large enough to give the head free liberty to rife again towards the fundus, or (according to the other opinion) to fink down, by its specific gravity, to the os internum? Some, indeed, suppose, that the head always presents itself, except when it is hindered by the funis umbilicalis twisting round the neck and body, fo as to impede the natural progress. But, were this supposition just, when we turn and deliver by the feet those children that presented in a preternatural way, we fhould always find them more or less circumvoluted by the navel-string: whereas I have as often found the funis twifted round the neck and body, when the head presented, as in any other case; and when other parts offered, have frequently delivered the child without finding it in the least entangled by that cord. That the head is downwards all the the time of gestation, seems, on the

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the whole, to be the most reasonable opinion. though it be liable to the objection already mentioned, and feems contradictory to the obfervation of some authors, who allege, that, in opening women that died in the fifth, fixth, or seventh month, they have found the child's head towards the fundus uteri. But as it lies as easy in one posture as in another till the birth, this dispute is of less consequence in the practice of Midwifery. It may be useful to fuggest, that the wrong posture of the child in the uterus may proceed from circumyolutions of the funis umbilicalis, (fee Tab. XXIX.) Or when there is little or no water furrounding the child, it may move into a wrong polition, and be confined there by the stricture of the uterus; (see Tab. XXX. XXXI. XXXII. XXXIII.) Or laftly, it may be the effect of a pendulous belly or narrow pelvis, when the head lies forward over the pubis. See Collect. XIII. and Tab. XII. XXVII. XXXIV.

SECT. II. Of Touchings.

Touching is performed by introducing the fore-finger lubricated with pomatuma into the vagina, in order to feel the os internum and neck of the uterus; and fometimes into the rectum, to discover the stretching of the fundus. By some, we are advised to touch with the middle singer, as being the longest; and by others, to employ both that and the sirst; but the middle is too much en-

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cumbered by that on each fide, to answer the purpose fully; and when two are introduced together, the patient never fails to complain. The design of touching is to be informed whether the woman is or is not with child; to know how far she is advanced in her pregnancy; if she is in danger of a miscarriage; if the os uteri be dilated; and, in time of labour, to form a right judgment of the case from the opening of the os internum; and the pressing down of the membranes with their waters; and lastly, to distinguish what part of the child is presented.

It is generally impracticable to discover by a touch in the vagina, whether or not the uterus is impregnated, till after the fourth month: when the best time for examination is the morning, when the woman is fasting, after the contents of the bladder and rectum have been discharged: and she ought, if necessary, to fubmit to the inquiry in a standing posture; because, in that case, the uterus hangs lower down in the vagina, and the weight is more fenfible to the touch than when she lies reclined. One principal reason of our uncertainty is, when we try to feel the neck, the womb rifes up on our prefling against the vagina, at the fide of the os internum, (fee Tab. VI. fig. 1.); and in some, the vagina feels very tense: but, when the fundus uteri is advanced near the navel, the pressure from aabove keeps down the os internum fo much, that you can generally feel, both the neck, and, above that, the stretching of the under part of the uterus. See Tab. VI. VIII.

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There is no confiderable variation to be felt. in the figure of the os internum, except in the latter end of pregnancy, when it fometimes grows larger and fofter, (see Tab. IX.); nor do the lips feem to be more closed in a woman with child than in another, especially in the beginning of pregnancy; but, in both cases, the os uteri is felt like the mouth of a young puppy or tench, as we have before observed. In fome, the lips are very small; in others, large; and fometimes, though feldom, fmoothed over or pointed. In many women, who have formerly had children and difficult labours, the lips are large, and fo much separated as to admit the rip of an ordinary finger; but, a little higher up, the neck feems to be quite closed.

In the first four months, the neck of the womb may be felt hanging down in the vagina, by pushing up the singer by the side of the os internum: but the stretching of the uterus and upper part of the neck cannot be perceived till the sisth, and sometimes the sixth, month; and even then the uterus must be kept down, by a strong pressure upon the

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The stretching of the fundus is sometimes felt by the singer introduced into the rectum, before it can be perceived in the vagina; because, in this last method, the uterus recedes from the touch, and rises too high to be accurately distinguished; whereas the singer, being introduced into the rectum, passes along the back of the womb almost to the upper part of

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the fundus, which, in an unimpregnated state is felt flat on the back-part, and jetting out at the sides; but the impregnated uterus is per-

ceived like a large round tumour.

About the fifth or fixth month, the upper part of the uterus is fo much stretched, as to rife three or four inches above the os pubis, or to the middle space between that and the navel; fo that, by preffing the hand on the belly, especially of lean women, it is frequently perceived: (see Tab. VII.), and if, at the same time, the index of the other hand be introduced in the vagina, the neck will feem shortened, particularly at the fore-part and fides; and, as I have already observed, the weight will be fenfibly felt: but if the parietes of the abdomen are stretched after eating, one may be deceived by the preffure of the stomach, because weight and pressure are the same. But all these signs are more perceptible towards the latter end of pregnancy; and in some women the os internum is felt a little open some weeks before the full time, though generally it is not opened till a few days before labour begins.

From the fifth to the ninth month, the neck of the uterus becomes shorter and shorter, and the stretching of the womb grows more and more perceptible. In the seventh month, the fundus rises as high as the navel; in the eighth month, to the middle space betwixt the navel and scrobiculus cordis; and in the ninth, even to the scrobiculus, except in pendulous bellies: (See Tab. VII, VIII, IX.) But

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all these marks may vary in different women; for when the belly is pendulous, the parts below the navel are much more stretched than those above, and hang over the os pubis: the fundus will then be only equal to. or a little higher than, the navel; at other times, the uterus will rife in the latter end of the feventh or eighth month to the fcrobiculus cordis. The neck of the womb will, in fome, be felt as long in the eighth, as in others in the fixth or feventh month. This variation fometimes makes the examination of the abdomen more certain than the touch of the vagina; and so vice versa. At other times, we must judge by both. See Collect. XIII. and Tab. XII.

SECT. III. Of the Signs of Conception, and the equivocal Signs of pregnant and obstructed Women.

THE figns of pregnancy are to be distinguilhed from those that belong to obfructions, by the touch in the vagina, and motion of the child, in the fifth or fixth month :: fometimes, by the touch in the rectum, before and after the fifth month, when the tumour of

the abdomen is plainly perceived.

Most women, a day or two before the irruption of the catamenia, labour under complaints proceeding from a plethora; fuch as stretching pains in the back and loins, infide of the thighs, breast, and head; a sickness and oppression at the stomach, and a fullnessof all the viscera of the abdomen; and all thefe

these symptoms abate, and gradually vanish, when the discharge begins and continues to flow. But if the woman be obstructed by any accident or error in the non-naturals, all those complaints continue and increase, and are hardly diftinguishable from the fymptoms of pregnancy, till the end of the fourth month: at which period, women with child grow better, and all the complaints of fullness gradually wear off; whereas those who are only obstructed, grow worse and worse, from the increase of the lentor in the fluids, which will in time produce various and dangerous difeases. The fundus uteri, in the obstructed patient, is not stretched, nor is the disorder in her stomach so violent as in a pregnant wo man, and feldom accompanied with retchings; while the woman with child is afflicted with a retching every morning, and subject to longings belides. The first labours under a fullness of the vessels; the last, over and above this complaint, fuffers an additional one from the distention of the uterus by the impregnated ovum. Obstructions and pregnancy are both accompanied by a stretching fullness of the breafts: but in the last only may be perceived the areola, or brown ring, round the niples, from which, in the last months, a thin ferum distils: but this circle is not always fo discernible as in the first pregnancy, and even then is uncertain as well as the others.

About the fifth or fixth month, the circumferibed tumour, or stretching of the uterus, is felt above the os pubis; and by this circum-

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fcription and confistence, easily distinguished from the ascites or dropfy of the abdomen: it is also rounder and firmer than those swellings that accompany obstructions which proceed from a general fullness of the vessels belonging to the ligaments and neighbouring viscera.

On the whole, the difficulty of distinguishing between obstruction and pregnancy, in the first months, is so great, that we ought to be cautious in giving our opinion; and never prescribe such remedies as may endanger the fruit of the womb, but rather endeavour to palliate the complaints until time shall discover the nature of the case; and always judge on the charitable side, when life or reputation is at stake.

In the fifth or fixth month of uterine gestation, by the touch in the vagina, we perceive the neck of the womb considerably shortened; and the stretching of the lower part of the uterus is then sensibly felt between the mouth of the womb and the pubes, and on each side of the neck. See Tab. VI. VIII.

In the seventh month, the head of the child is frequently felt resting against the lower part of the uterus, between the pubes and os inter-

num; and, being pushed upward towards the the fundus, sinks down again by its own gravity. All these diagnostics are more plain and certain, the nearer the patient approaches to the time of delivery.

Sometimes, the head is not felt till the eighth or ninth month; and in some few cases not till after the membranes are broke, when it is forced down by the contraction of the uteras

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and strong labour-pains. This circumstance may be owing to the head's resting above the basin, especially in a narrow pelvis; or to the distetinon of its belly with air after death, by which the seetus being rendered specifically lighter than the surrounding waters, the body sloats up to the fundus, if there is a large quantity of sluid in the membranes: nor is the body always selt when the child lies across the Uterus. See Collect. XIII.

SECT. IV. How to distinguish the FALSE LABOUR from the TRUB, and the Means to be used on that Oceasion.

TF the os uteri remains close shut, it may L be taken for granted that the woman is not yet in labour, notwithstanding the pains the may fuffer. With regard to these, an accurate inquiry is to be made; and if her complaints proceed from an overstretching fullness of the uterus, or veffels belonging to the neighbouring parts, blooding in the arm or ankle, to the quantity of fix or eight ounces, ought to be prescribed, and repeated occafionally. If the pains are occasioned by a looseness or diarrhœa, it must be immedieately restrained with opiates, as in Book II. chap. iii. fect. 4. Colic pains are diffinguished from those of labour, by being chiefly confined to the belly, without going off and returning by distinct intervals: they are for the most part produced by fæces too long retained in the colon, or by fuch ingesta as occasion a rarefaction

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faction or expansion of air in the intestines, by which they are violently stretched and vellicated. This complaint must be removed by opening glysters, to empty the guts of their noxious contents: and this evacuation being performed, opiates may be administered to assuage the pains; either to be injected by the anus, taken by the mouth, or applied externally in the form of epithem or embrocation.

Sometimes the os internum may be a little dilated, and yet it may be difficult to judge whether or not the patient be in labour. The case, however, may be ascertained after some attendance, by these considerations: If the woman is not arrived at her full time; if no foft or glary mucus hath been discharged from the vagina; if the pains are limited to the region of the belly, without extending to the back and infide of the thighs: if they are flight, and continue without intermission or increase; nay, if they have long intervals, and recur without force fufficient to push down the waters and membranes, or child's head, to open the os internum; if this part be felt thick and rigid, instead of being soft, thin, and yielding: we may fafely pronounce, that labour is not yet begun; and those alarms are to be removed as we have directed in the case of false or colic pains. Besides, if the pulse be quick and strong, and the patient attacked by stitches. in the fides, back, or head, blooding will be likewise necessary. See Collect. XIII. and Tab. VIII. IX. X.

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SECT. V. The Division of LABOURS.

HIPPOCRATES, and almost all the writers upon this subject from his time to the fifteenth century, divided labour into two kinds; namely, Natural and Preternatural, The first comprehended those cases in which the head (others fay the head and breech) prefented, though the prefentation of the head was always deemed the most natural: the other included all births in which any other part of the body first offered itself. And though they did not, like us, use a third distinction, they feem to have understood it in their practice; for, among their chirurgical operations, we always find a chapter on the method of delivering dead children, by opening the head, and extracting with the crotchet. At prefent, labours are divided into natural, according to the ancients, when the head or breech prefents; laborious, when, notwithstanding this fituation of the child, the delivery goes on fo tediously, that the woman is in danger of lofing her life, unless she is affisted with the operator's hand, fillet, forceps, blunt hook, or crotchet; and preternatural, when neither head nor breech prefents, fo that for the most part there is a necessity for turning the child and bringing it away by the feet. But the division of labours hath been varied according to the opinion of different people. Some think that all those cases ought to be deemed preternatural, in which any part of the body (the head itself not excepted) presents in an unufual way. Others affirm, that whatever part presents, or however the posture of the child may be, if it is delivered without any other affistance than that of the labour pains, the birth ought to be called natural; laborious, when in these cases the child is born with difficulty; and preternatural, when, lying across the uterus, it must be turned and delivered by the feet.

For my own part, having in teaching found all these divisions liable to objections, I have followed a method which is more simple than the others, and will save abundance of repe-

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I call that a natural labour, in which the head prefents, and the woman is delivered by her pains and the affistance commonly given: but, should the case be so tedious and lingering, that we are obliged to use extraordinary force in stretching the parts, extracting with the forceps, or (to fave the mother's life) in opening the head and delivering with the crotchet, I diffinguish it by the appellation of laborious: and in the preternatural, I comprehend all those cases in which the child is brought by the feet, or the body delivered before the head. Neither do I mind how the child prefents, fo much as the way in which it is delivered: for there are cases in which the head presents, and for several hours we expect the child will be delivered in the natural way; but, if the woman has not trength enough to force down the child's head into the pelvis, or in floodings we are

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at length obliged to turn and bring it by the feet, because it is so high that the forceps cannot be applied, and, if the child is not large nor the pelvis narrow, it were pity to destroy the hopes of the parents, by opening the skull and extracting with the crotchet. In this case, therefore, although the child presents in a natural way, we are obliged to turn and deliver it in the same manner as if the shoulder, breast, or back, had prefented: and, generally, this operation is more difficult than in either of those cases; because, if the waters are all discharged, and the uterus close contracted round the fœtus, it is more difficult to raife the head to the fundus. When the breech prefents, we are frequently obliged to push it up and fearch for the legs; which being found, we proceed to deliver the body, and lastly the head. If the head is large or the pelvis narrow, and the waters not discharged, we ought, if possible, to turn the child into the natural position.

For a farther illustration, and to inform young practitioners that difficult cases do not frequently occur; suppose, of three thousand women in one town or village, one thousand shall be delivered in the space of one year, and in nine hundred and ninety of these births the child shall be born without any other than common affistance: Fifty children of this number shall offer with the fore-head turned to one side at the lower part of the pelvis, where it will stop for some time; ten shall come with the fore-head towards the groin, or mid-

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dle of the pubes; five shall present with the breech, two or three with the face, and one or two with the ear: yet, all thefe shall be fafely delivered, and the case be more or less lingering and laborious according to the fize of the pelvis and child, or strength of the wowan. Of the remaining ten that make up the thousand, fix shall present with the head differently turned, and two with the breech; and these cannot be faved without stretching the parts, using the forceps or crotchet, or pushing up the child in order to bring it by the feet; this necessity proceeding either from the weakness of the woman, the rigidity of the parts, a narrow pelvis, or a large child, &c.: the other two shall lie across, and neither head nor breech, but some other part of the body, prefent, so that the child must be turned and delivered by the feet. Next year, let us suppose another thousand women delivered in the same place; not above three, fix, or eight, shall want extraordinary affistance; nay, sometimes, though feldom, when the child is young or unufually finall, and the mother has strong pains and a large pelvis, it shall be delivered even in the very worst position, without any other help than that of the labour-pains.

As the head therefore presents right in nine hundred-and-twenty of a thousand labours, all such are to be accounted natural; those of the other seventy that require assistance may be deemed laborious; and the other ten, to be denominated laborious or preternatural, as they are delivered by the head or feet.

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In order, therefore, to render this treatife as distinct as possible, for the fake of the reader's memory, as well as of the dependence and connection of the different labours, they are divided in the following manner: That is accounted natural, in which the head prefents. and the woman is delivered without extraordinary help; those births are called laborious or nonnatural, when the head comes along with difficulty, and must be assisted either with the hand in opening the parts, or with a fillet or forceps, or even when there is a necessity for opening and extracting it with the crotchet; and those in which the child is brought by the breech or feet, are denominated preternatural, because the delivery is performed in a preterprogramme on the light passing natural way. of the state of the sale he sale

CHAP. II. NATURAL LABOURS.

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TN almost all countries, the woman is allowed either to fit, walk about, or rest upon a bed, until the os uteri is pretty much dilated by the gravitation of the waters, or (when they are in small quantity) by the head of the fœtus, so that delivery is soon expected; when she is put in such position as is judged more fafe, easy, and convenient for that purpose: but the patient may be put upon labour

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too prematurely, and bad consequences will attend such mistakes. See Collect. XIII. XIV.

Among the Egyptians, Grecians, and Romans, the woman was placed upon a high stool: in Germany and Holland, they use the chair which is described by Daventer and Heister: and for hot climates the stool is perfectly well adapted; but in northern countries, and cold weather, such a position must endanger the patient's health.

In the West Indies, and some parts of Britain, the woman is scated on a stool made in form of a semicircle: in other places; she is placed on a woman's lap; and some, kneeling on a large cushion, are delivered backwards.

In France, the position is chiefly that of halfsitting half-lying, on the side or end of a bed; or the woman, being in naked bed, is

raifed up with pillows or a bed-chair.

The London method is very convenient in natural and easy labours: the patient lies in bed upon one fide, the knees being contracted to the belly, and a pillow put between them to keep them asunder. But the most commodious method is to prepare a bed and a couch in the same room: a piece of oiled cloth or dreffed sheep-skin is laid across the middle of each, over the under-sheet; and above this are spread several folds of linen pinned or tied with tape to each fide of the bed and couch. These are designed to sponge up the moisture in time of labour and after delivery; while the oiled cloths or sheep-skins below preserve the feather-bed from being wetted or spoiled:

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fpoiled: for this purpuse, some people lay befides upon the bed several under-sheets over one another, so that by sliding out the uppermost every day, they can keep the bed dry and comfortable.

The couch must be no more than three feet wide, and provided with casters; and the woman, without any other drefs than that of a fhort or half shift, a linen skirt or petticoat open before, and a bed-gown, ought to lie down upon it, and be covered with cloaths according to the feafon of the year. She is commonly laid on the left fide, but in this particular she is to confult her own ease; and a large fleet being doubled four times or more, one end must be slipt in below her breech, while the other hangs over the fide of the couch, to be fpread on the knee of the accoucheur or midwife, who fits behind her on a low feat. As foon as she is delivered, this sheet must be removed, a soft warm cloth applied to the os externum, and the pillow taken from betwixt her knees: she then must be fhifted with a clean warm half-shift, linen skirt, and bed-gown, and the belly kept firm with the broad head-band of the skirt, the ends of which are to be pinned across each other. These measures being taken, the couch must be run close to the bed-fide, and the patient gently moved from one to another; but if there is no couch, the bed must be furnished with the same apparatus. Some, again, are laid across the foot of the bed, to the head of which the cloaths are previously turned up till after

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after delivery, when the woman's posture is adapted, and then they are rolled down again to cover and keep her warm. By this expedient the place of a couch is supplied, and the upper part of the bed preserved soft and clean: whereas those who are laid above the cloaths, must be taken up and shifted while the bed is put to rights, in which case they are subject to fainting; and to such as are very much en-

feebled, this fatigue is often fatal.

Women are most easily touched, least fatigued, and kept warmest, when they lie on one fide. But if the labour should prove tedious, the Parisian method seems most eligible; because, when the patient half sits half lies, the brim of the pelvis is horizontal; a perpendicular line falling from the middle space between the scrobiculus cordis and navel, would pass exactly through the middle of the basin, as observed in Book I. chap. it. In this position, therefore, the weight of the waters, and, after the membranes are broke, that of the child's head, will gravitate downwards, and affift in opening the parts, while the contracting force of the abdominal muscles and uterus is more free, strong, and equal, in this than in any other attitude. Wherefore, in all natural cases, when the labour is lingering or tedious, this or any other position, such as standing or kneeling, ought to be tried, which, by an additional force, may help to puth along the head and alter its direction when it does not advance in the right way. Nevertheless, the Vol. I. G

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When the woman lies on the left fide, the right-hand must be used in touching, and vice versa, unless she is laid across on the bed; in which case, either hand will equally answer the same purpose: but if she lies athwart with the breech towards the bed's foot, it will be most convenient to touch with the left-hand when she is upon the left side, and with the right when in the opposite position. And here it will not be amiss to observe, that in the defcription of all the laborious and preternatural deliveries treated of in this performance, the reader must suppose the woman lying on her back, as directed in chap, iii. fect. 2. and chap. iv. fect. 4. except when another posture is prescribed; and that in natural and laborious labours, whether she be upon her side or back, the head and shoulders are a little raised into a reclining posture, fo that she may breathe eafily, and affift the pains.

But in preternatural labours, when there is a necessity for using great force in turning the child, the head and shoulders must lie lower than the breech, which, being close to the fide or foot of the bed, ought to be raised higher than either; because, when the pelvis is in this fituation, the hand and arm are eafily pushed up in a right line along the back-part of the Sometimes, uterus, even to its fundus. however, when the feet of the child are towards the belly of the mother, they are more cafily felt and managed when the lies on her

fide.

fide. At other times, placing the woman on her knees and elbows on a low couch, according to Daventer's method, will succeed better by diminishing in part the strong resistance from the pressure and weight of the uterus and child, by which the feet will sometimes be easier found and delivered: but then it is safer to the child, and easier for the operator and mother, to turn her to her back before you deliver the body and head.

SECT. II. Of the Management of Women in a Natural Labour.

IN a woman come to full time, labour commonly begins and proceeds in the follow-

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The os uteri is felt soft and a little opened, the circumference being sometimes thick, but chiefly thin; from this aperture is discharged a thick mucus, which lubricates the parts, and prepares them for stretching. This discharge usually begins some days before; and is accounted the forerunner of real labour: at the same time the woman is seized at intervals with slight pains that gradually stretch the os uteri, sitting it for a larger dilatation; and when labour actually begins, the pains become more frequent, strong, and lasting.

At every pain the uterus is strongly compressed by the same effort which expels the contents of the rectum at stool; namely, the inflation of the lung, and the contraction of

the abdominal muscles.

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If the child be furrounded with a large quantity of waters, (fee Tab. IX. X. XI.) the uterus cannot come in contact with the body of it; but at every pain the membranes are pushed down by the fluids they contain, and the mouth of the womb being sufficiently opened by this gradual and repeated diftenon, they are forced into the middle of the vagina; then the uterus contracts and comes in contact with the body of the child, and, if it be small, the head is propelled with the waters. Here the membranes usually break; but if that is not the case, they are pushed along towards the os externum, which they also gradually open, and appear on the outfide in the form of a large round bag: meanwhile, the head advances, and the os externum being by this time fully dilated, is also protruded; when, if the membranes, instead of bursting in the middle of the protuberance, are tore all round at the os externum, the child's head is covered with some part of them, which goes under the name of the caul, or king's bood. If the placenta is at the same time separated from the uterus, and the membranes remain unbroken, the fecundines, waters, and child, are delivered together; but if the placenta adheres, they must of course give ay: and should they be tore all around from placenta, the greatest part of the body, as well as the head of the child, will be envethem, from which it must be immeigaged, that the air may have a lage into the lungs.

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When the head is large, fo that it does not descend immediately into the pelvis, the membranes are forced down by themselves, and being stretched thinner and thinner give way; when all the waters which are farther advanced than the head run out: then, the uterus coming in contact with the body of the child, the head is squeezed down into the mouth of the womb, which it plugs up so as to detain the rest of the waters. See Tab. XII. XIII.

Sometimes when the quantity of waters is very fmall, and the uterus embraces the body of the child, the head, covered with the membranes, is forced downwards, and gradually opens the os internum; but at its arrival in the middle of the pelvis and vagina, part of the waters will be pushed down before it, fometimes in a large and fometimes in a fmall proportion, towards the back-part of the pelvis. At other times, when the waters are in small quantity, no part of them are to be distinguished farther than the head, which descending lower and lower, the attenuated membranes are split upon it; while at the same time it fills up the mouth of the womb and upper part of the vagina in fuch a manner as hinders the few remaining waters from being discharged at once; though in every pain a small quantity distils on each fide of the head. for lubricating the parts, so as that the child may flip along the more eafily. See Tab. XIII.

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The uterus contracts; the pains become quicker and stronger; the crown of the head is pushed down to the lower part of the pelvis.

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against one of the ischia, at its lower extremity; the fore-head, being at the upper part of the opposite ischium, is forced into the hollow of the under part of the facrum, while the vertex and hind-head is preffed below the os pubis, (see Tab. XIV.) from whence it rises in a quarter-turn, gradually opening the os externum; the frænum labiorum, or fourchette, perinæum, fundament, and the parts that intervene betwixt that and the extremity of the facrum, are all stretched outwards in form of a large tumour. The perinæum, which is commonly but one inch from the os externum to the anus, is now stretched to three, the anus to two, and the parts between that and the coccyx are stretched from two inches to about three or more. The broad facro-sciatic ligaments, reaching from each fide of the lower part of the facrum, to the under part of each ischium, are also outwardly extended, and the coccyx is forced backward; while the crown of the head, where the lambdoidal croffes the end of the fagittal future, continues to be pushed along, and dilates the os externum more and more. See Tab. XV. XVIII.

When the head is so far advanced that the back part of the neck is come below the under part of the os pubis, the forehead forces the coccyx, fundament, and perinacum, backwards and downwards; then the hind-head rises about two or three inches from under the the pubes, making an half-round turn in its ascent, by which the forehead is equally raised from the parts upon which it pressed, and the

the perinæum escapes without being split or torn; (see Tab. XIX.): at the same time, the shoulders advance into the sides of the pelvis at its brim where it is widest, and, with the body, are forced along and delivered: meanwhile, by the contraction of the uterus, the placenta and chorion are loosened from the inner surface to which they adhered, and forced through the vagina, out at the os externum.

When the head rests at first above the brim of the pelvis, and is not far advanced, the fontanel may be plainly felt with the finger, commonly towards the fide of the pelvis: this is the place where the coronal croffes the faggital future, and the bones are a little feparated from each other, yielding a foftness to the touch, by which may be distinguished four futures, or rather one croffing another. These may be plainly perceived, even before the membranes are broke: yet the examination: must not be made during a pain, when the membranes are stretched down and filled with waters; but only when the pain begins to remit, and the membranes to be relaxed; otherwife they may be broke too foon, before the: os internum be fufficiently dilated, and the head properly advanced.

When the vertex is come lower down, the fagittal future only is to be felt; because, as the hind-head descends in the pelvis, the fontanel is turned more backwards to the side, or towards the concavity of the sacrum: but, after it has arrived below the under part of the ossa pubis, the lambdoidal may be felt

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Chap. II. crofting the end of the fagittal future, the occiput making a more obtuse angle than that of the parietal bones, at the place where the three are joined together. But all these circumstances are more easily distinguished after the membranes are broke, or when the head is fo compressed that the bones ride over one another, provided the hairy scalp be not ex-

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SECT. III.

ceffively swelled. See Collect. XIV. and Tab.

XIII. XIV. XVI. XVII. XVIII.

NUMB. I. How and when to break the Membranes.

HAVE already observed, that if the child L be furrounded with a large quantity of waters, the uterus cannot come in contact with the body, fo as to press down the head, until the membranes are pulhed a confiderable way before it into the vagina: nor even then, until they are broke, and the fluid diminished in such a manner as will allow the womb to contract, and, with the affiftance of the pains, force along the child. When the membranes, therefore, are strong or unadvanced, and continue fo long unbroke that the delivery is retarded, provided the os internum be fufficiently dilated, they ought to be broke without further delay, especially if the woman hath been much fatigued or exhausted with labour, or is seized with a violent flooding: in which case, the rupture of the membranes hasten delivery, and the hæmorrhagy is diminished by the contraction of the

the uterus, which lessens the mouth of the veffels that are also compressed by the body of the child.

The common method of breaking the membranes, is by thrusting the fingers against them when they are protruded with the waters during the pain, or by pinching them with the finger and thumb; but if they are detained too high to be managed in either of these methods, the hand may be introduced into the vagina, if the os externum is fo lax as to admit it easily: and if this cannot be done without giving much pain, the fore and middle fingers being pushed into the vagina with the other hand, let a probe or pair of pointed scissars be directed along and between them, and thrust through the membranes when they are pushed with the waters below the head. This operation must be cautiously performed, lest the head should be wounded in the attempt; and as for the membranes, let the opening be ever fo fmall, the waters are difcharged with force sufficient to tear them afunder.

NUMB. II. When little or no waters are protruded.

If the vertex, instead of resting at the side of the brim of the pelvis, or at the os pubis, is forced farther down to the os internum, and the waters happen to be in small quantity. the head is pushed forwards, and gradually opens the mouth of the womb without any sensible interposition of the waters: then it advances by degrees into the vagina, and the membranes

membranes being split or tore, little or no. thing is discharged until the body of the child be delivered: and in this case, the hair of the head being plainly felt, will be a fufficient in. dication that the membranes are broke. If no hair is to be felt, but a smooth body prefents itself to the touch, and the woman has undergone many strong pains even after the mouth of the womb bath been largely dilated, and the head forced into the middle of the pelvis, you may conclude that dilivery is retarded by the rigidity of the membranes, that there is but a small quantity of waters, and that if the containing facs were broke the head would come along without farther helitation.

Sometimes no waters can be felt while the head is no farther advanced than the upper part of the pelvis, because it plugs up the pasfage and keeps them from descending; but as it advances downwards, the uterus contracts, and they are forced down in a fmall quantity towards the back-part; from thence, as the head descends, or even though it should stick in that situation, they are pushed farther down, and the membranes may be eafily broke; but the talk is more difficult when no waters come down, and the membranes are contiguous to the head. In this case, they must be scratched a little, during every pain, with the nail of a finger, which, though short and fmooth, will by degrees wear them thinner and thinner, until they split upon the head by the force of labour. Yet this expedient ought never

never to be used until you are certain that delivery is retarded by their rigidity; for, if that be not the hindrance, the difficulty must proceed from the weakness of the woman, a large head, or narrow pelvis: in which cafe, the delivery is a work of time, and will be obstructed by the premature discharge of the waters, which, by gradually passing by the head, ought to keep the parts moist and slippery, in: order to facilitate the birth: for, when the membranes are not broke, until the head is forced into the middle of the pelvis, the largest part of it being then past the upper part of the facrum, is commonly fqueezed along, opens: the os externum, and is delivered before all the waters are discharged from the uterus; so that what remains, by moiltening and lubricating the parts, helps the shoulders and body to pals with more eafe. When the membranes are too foon broke, the under part of the uterus contracts fometimes fo strongly before the shoulders, that it makes the resistance still a greater. See Collect. XV.

NUMB. III. How to manage when the Head comes of down into the PELVIS.

In most natural labours, the space betwist the fore and back fontanels, viz. the vertex, presents to the os internum, and the forehead is turned to the side of the pelvis; because the basin at the brim is widest from side to side; and frequently, before the head is pushed in and sast wedged among the bones, the child (after a pain) is selt to move and turn it

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to that fide or fituation in which it is least preffed and hurt, if it was not presenting in that position before. But this position of the head may alter, viz. in those where it is as wide, or wider, from the back-part to the fore-part of the brim, than from side to side, the forehead may be turned backwards or forwards. But this form of the pelvis seldom happens.

This posture is always observed in a narrow pelvis, when the upper part of the facrum jets forward to the pubes; but as the child is forced lower down, the forehead turns into the hollow at the interior part of the facrum, because the vertex and occiput find less resistance at the lower part of the offa pubis than at the ischium, to which it was before turned, the pelvis being at the pubes, as formerly described, no more that two inches in depth, whereas at the ischium it amounts to four. If, therefore, the forehead sticks in its former situation, without turning into the hollow, it may be affifted by introducing some fingers, or the whole hand, into the vagina, during a pain, and moving it in the right position. See Chap. IV. Sect. iv. No 5.

When the head of the fœtus presents, and is forced along in any of those positions, the labour is accounted natural, and little else is to be done, but to encourage the woman to bear down with all her strength in every pain, and to rest quietly during each interval: if the parts are rigid, dry, or inslamed, they ought to be lubricated with pomatum, hog's-lard, butter, or ung. although the two first are most proper for

for the external parts, and the two last (as being harder and not so easily melted) ought to be put up into the vagina to lubricate that and the os internum.

NUMB. IV. How to affift in LINGERING I ABOURS when the Parts are rigid.

THE mouth of the womb and os externum. for the most part, open with greater difficulty in the first than in the succeeding labours, more especially in women turned of thirty. In these cases, the os externum must be gradually dilated in every pain, by introducing the fingers in form of a cone, and turning them round, fo as to firetch the parts by gentle degrees; and the whole hand being admitted into the vagina, it will be fometimes found necessary to infinuate the fingers with the flat of the hand between the head and os internum: for when this precaution is not taken in time, the os uteri is frequently pushed before the head (especially that part of it next the pubes), even through the os externum; or if the head paffes the mouth of the womb, it will protrude the parts of the os externum, and will endanger a laceration in the perinæum. This dilatation. however, ought to be cautiously performed, and never attempted except when it is absolutely necessary; even then it must be affected flowly, and in time of a pain, when the woman is least fensible of the dilating force.

When the labour happens to be lingering, though every thing be in a right posture, if the assistants are clamorous, and the woman-

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herfelf too anxious and impatient to wait the requifite time without complaining, the labour will be actually retarded by her uneafiness, which we must endeavour to surmount by arguments and gentle persuasion: but if she is not to be fatisfied, and strongly impressed. with an opinion that certain medicines might: be administered to hasten delivery, it will be convenient to prescribe some innocent medicine that she may take between whiles, to beguile the time and please her imagination; but if she is actually weak and exhausted, it will be necessary to order fomething that will quicken the circulating fluids, fuch as preparations of amber, caftor, myrrh, volatile fpirits, the pulv. myrrb. composit. of the London. or pulv. ad partum of the Edinburgh Pharmacopæia, with every thing in point of diet and drink that nourishes and strengthens the body. If the patient is of a plethoric habit, with a quick, strong pulse, the contrary method is to be used, such as venæsection, antephlogistic medicines, and plentiful draughts of weak, diluting fluids. See Collect. XVII. XVIII.

NUMB. V. How to behave when the Birth is obfiructed by the Navel-string of the Child, or a narrow Pelvis. See Book II. chap. ii. feet. 3.

ALTHOUGH the head is pushed down into the pelvis, and the vertex employed in opening the os externum, the forehead being lodged in the concavity formed by the coccyx and lower part of the facrum; yet frequently, after the labour-pain is abated, the head is again with-

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n hwithdrawn, by the navel-strink happening to be twisted round the neck; or when the shoulders, instead of advancing, are retarded at the brim of the pelvis, one resting over the offa pubis, while the other is fixed at the facrum; or when (the waters having been long evacuated) the under-part of the uterus contracts round the neck and before the shoulders,

keeping up the body of the child.

When the head is therefore drawn back by any of these obstacles, and the delivery hath been retarded during feveral pains, one or two fingers being introduced into the rectum before the pain goes off, ought to press upon the forehead of the child at the root of the nofe, great care being taken to avoid the eyes: this preffure detains the head till the return of another pain, which will squeeze it farther down, while the fingers pushing slowly and gradually turn the forehead halt round outwards and half round upwards. By this affistance, and the help of strong pains, the child will be forced along, although the neck be entangled in the navel-string: for as the child advances the uterus contracts, and consequently the placenta is moved lower; the funis umbilicalis will also stretch a little, without obstructing the circulation.

The head being thus kept down, the shoulders too are pressed in every succeeding pain until they are forced into the pelvis, when the whole comes along, without further difficulty. And this expedient will, moreover, answer the purpose, when the under-part of the uterus or the

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os internum is contracted round the neck of the child, and before the shoulders: also, when the head is very low, pressing a finger on each fide of the coccyx externally, will frequently affift in the same manner; also, in lingering cases, when the woman is weak, the head large, or the pelvis narrow, you may affift the delivery by gently stretching both the os externum and internum with your fingers, in time of the pains, which will increase the fame, as well as dilate; but this is only to be done when abfolutely necessary, and with caution and at intervals, for fear of inflaming or lacerating the parts.

Over and above these obstacles, the head may be actually delivered, and the body retained by the contraction of the os externum round the neck, even after the face appears externally. In this case it was generally alleged that the neck was close embraced by the os internum: but this feldom happens when the head is delivered, because then the os internum is kept dilated on the back-part and fides by the breast and arms of the fœtus, unless it be forced low down with or before the head.

When the head is delivered, and the rest of the body retained from the largeness or wrong prefenting of the shoulders, or by the navelstring's being twisted round the body or neck of the child, the head must be grasped on each fide, the thumbs being applied to the occiput, the fore and middle fingers extended along each fide of the neck, while the third and fourth of each hand support each side of the upper iaw:

jaw: thus embraced, the head must be pulled ftraight forwards; and if it will not move eafily along, the force must be increased, and the direction varied from fide to fide, or rather from shoulder to shoulder, not by sudden jerks, but with a flow, firm, and equal motion: If the body cannot be moved in this manner, though you have exerted as much force as possible without running the risk of over-straining the neck, you must endeavour to slip the turns of the navel-string over the head. But should this be found impracticable, you ought not trifle in tying the string at two places, and cutting betwixt the ligatures, as some people have advifed: fuch an operation would engross too much time; besides, the child is in no danger of fuffocation from the stricture of the funis, because it seldom or never breathes before he breaft is delivered.

The better method is, immediately to flide along one or two fingers, either above or below, to one of the arm-pits, by which you try to bring along the body, while with the other hand you pull the neck at the same time: if it still continues unmoved, shift hands, and let the other arm-pit sustain the force; but if this fail, cut the navel-string, and tie it afterwards. If the shoulders lie so high that the fingers cannot reach far enough to cut or take fufficient hold, let the flat of the hand be run along the back of the child: or should the os externum be strongly contracted round the neck, push up your hand along the breaft, and pull as before; and should this method fail, you must

have recourse to the blunt hook introduced and fixed in the arm-pit: but this expedient must be used with caution, lest the child should be injured or the parts lacerated.

The child being born, the funis umbilicalis must be divided, and the placenta delivered, according to the directions that will occur in the sequel. SeeCollect. XIX. XXI. XXII.

SECT. IV

NUMB. I. How to manage the CHILD after DE-

THE child being delivered, ought to be kept warm beneath the bed-cloaths, or immediately covered with a warmed flannel or linen cloth: if it cries and breathes, the umbilical cord may be tied and cut, and the child delivered to the nurse without delay; but if the air does not immediately rush into the lungs, and the circulation continues between it and the placenta, the operation of tying and cutting must be delayed, and every thing tried to stimulate, and fometimes to give pain. If the circulation is languid, respiration begins with difficulty, and proceeds with long intervals; and if it be entirely stopped in the funis, the child, if alive, is not easily recovered: fometimes a great many minutes are elapsed before it begins to breathe. Whatever augments the circulating force, promotes respiration; and as this increases, the circulation grows stronger, so that they mutually affift each other. In order to promote the one and the the other, the child is kept warm, moved, shaken, whipt; the head, temples, and break rubbed with spirits, garlic, onion, or mustard, applied to the mouth and nose; and the child has been sometimes recovered by blowing into the mouth with a silver canula, so as to ex-

pand the lungs.

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When the placenta is itself delivered, immediately or foon after the child, by the continuance of the labour-pains, or hath been extracted by the operator, that the uterus may contract so as to restrain too great a flooding; in this case, if the child has not yet breathed, and a pulfation is felt in the veffels, some people (with good reason) order the placenta, and as much as possible of the navel-string, to be thrown into a basin of warm wine or water, in order to promote the circulation between them and the child; others advise us to lay the placenta on the child's belly, covered with a warm cloth; and a third fet order it to be thrown upon hot ashes: but of these the warm water feems the most innocent and effectual expedient. Nevertheless, if the placenta is still retained in the uterus, and no dangerous flooding enfues, it cannot be in a place of more equal warmth while the operator endeavours, by the methods above described, to bring the child to life, See Collect. XXIII.

NUMB. II.

In lingering labours, when the head of the child hath been long lodged in the pelvis, fo that

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that the bones ride over one another, and the shape is preternaturally lengthened, the brain is frequently so much compressed, that violent convulsions ensue before or soon after the delivery, to the danger and oft-times the destruction of the child. This disorder is frequently relieved and carried off, and the bad consequences of the long compression prevented, by cutting the navel-string before the ligature is made, or tying it so slightly as to allow two, three, or sour large spoonfuls to be

discharged.

If the child has been dead one or two days before delivery, the lips and genitals (especially the scrotum in boys) are of a livid hue. If it hath lain dead in the uterus two or three days longer, the skin may be easily stript from every part of the body, and the navel-string appears of the same colour with the lips and genitals: if ten or sourteen days, the body is much more livid and mortisied, and the hairy scalp may be separated with ease; and indeed, any part of the child which hath been strongly pressed into the pelvis, and retained in that situation for any length of time, will adopt the same mortisied appearance.

NUMB. III. How to tie the FUNIS UMBILI-

DIFFERENT practitioners have used different methods of performing this operation: some proposing to tie and separate the sunis before the placenta is delivered; to apply one ligature close to the belly of the child, with a view to prevent

prevent a rupture of the navel; and making another two inches above the former, to divide the rope between the two tyings: by the fecond ligature they mean to prevent a dangerous hæmorrhagy from the woman, provided the placenta adheres to the uterus. But all these precautions are founded upon mistaken notions; and the following feems to be that which is easiest and best. If the placenta is not immediately delivered by the pains, and no flooding obliges you to haften the extraction, the woman may be allowed to rest a little and the child to recover. If the child does not breathe, or the respiration is weak, let the methods above prescribed be put in practice, with a view to stimulate the circulation; but if the child is lively, and cries with vigour, the funis may be immediately tied in this manner: Having provided a ligature or two composed of fundry threads waxed together, fo as to equal the diameter of a pack-thread, being feven inches in length and knotted at each end, tie the navel-string about two fingers breadth from the belly of the child, by making at first one turn if the funis be fmall, fecuring it with two knots; but if the cord be thick, make two more turns, and another double knot: then cut the funis with a pair of sharp scissars one finger's breadth from the ligature towards the placenta; and in cutting run the fciffars as near as possible to the root of the blades, else the funis will be apt to slip from the edge, and you will be obliged to make feveral fnips before you can effect a separation: at the same time,

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time, guard the point of the scissars with your other hand. The child being washed, a linen rag is wrapped round the tied funis; which being doubled up along the belly a square compress is laid over it, and kept firm or moderately tight with what the nurses call a belly.

band or roller round the body.

This portion of the funis foon shrinks, turns sirst livid, then black, and about the fifth day falls off close to the belly: and let the navel-string be tied in any part, or at any distance whatsoever from the belly, it will always drop off at the same place: so that ruptures in the navel seldom or never depend upon the tying of the sunis, but may happen when the compress and belly-band are not kept sufficiently firm and continued some time after the separation of the withered portion, especially in those children that cry much: the bandage ought always to be applied so slight as not to affect respiration.

The ligature upon the funis must always be drawn so tight as to shut up the mouths of the vessels; therefore, if they continue to pour out their contents, another ligature must be applied below the former; for if this precaution be neglected, the child will soon bleed to death: yet if the navel-string is cut or tore asunder at two or three handbreadths from the belly, and exposed to the cold without any ligature, the arteries will contract themselves, so that little or no blood shall be lost; nay, sometimes, if the sunis hath been tied and cut at the distance of three singer-breadths

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from the child's belly, so that it hath been kept from blooding for an hour or two, although the ligature be then untied, and the navel-string and belly chaffed, and soaked in warm water, no more blood will be discharged. See Collect. XXV.

SECT. V. Of delivering the PLACENTA.

THE funis being separated, and the child L committed to the nurse, the next care is to deliver the placenta and membranes, if they are not forced down by the labour-pains. We have already observed, that if there is no danger from a flooding, the woman may be allowed to rest a little, in order to recover from the fatigue she has undergone; and that the uterus may in contracting have no time to squeeze and separate the placenta from its inner furface: during which paufe also, about one, two, or three cups full of blood are difcharged through the funis from the veffels of the placenta, which is thus diminished in bulk, fo that the womb may be more contracted; and this is the reason for applying one ligature only upon the cord. In order to deliver the placenta, take hold of the navel-string with the left-hand, turning it round the fore and middle fingers, or wrapping it in a cloth, that it may not flip from your grasp; then pull gently from fide to fide, and defire the woman to affift your endeavour by straining as if she were at stool, blowing forcibly into her hand, or provoking herfelf to reach by thrusting

thrusting her finger into her throat. If by these methods the placenta cannot be brought away, introduce your hand slowly into the vagina, and feel for the edge of the cake, which when you have found pull it gradually along; as it comes out at the os externum, take hold of it with both hands and deliver it, bringing away at the same time all the membranes, which, if they adhere, must be pulled along with leisure and caution.

When the funis takes its origin towards the edge of the placenta, which is frequently the case, the cake comes easier off by pulling than when the navel-string is inserted in the middle, unless it be uncommonly retained by its adhesion to the womb, or by the strong contraction of the os internum. If the funis is attached to the middle of the placenta, and that part presents to the os internum or externum, the whole mass will be too bulky to come along in that position: in this case you must introduce two singers within the os externum, and bring it down with its edge foremost.

When the placenta is separated by the contraction of the uterus, in consequence of its weight and bulk it is pushed down before the membranes, and both are brought away in-

verted.

When part of the placenta hath passed the os internum, and the rest of it cannot be brought along by easy pulling, because the os uteri is close contracted round the middle of it, or part of it still adheres to the womb, slide the slat of your hand below the placenta thro

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the os internum; and having dilated the uterus, slip down your hand to the edge of the cake and bring it along: but if it adheres to the uterus, push up your hand again, and having separated it cautiously, deliver it as before.

If instead of finding the edge or middle of the placenta prefenting to the os externum or internum, you feel the mouth of the womb closely contracted, you must take hold of the navel-string as above directed, and slide your other hand along the funis into the vagina; then flowly push your fingers and thumb, joined in form of a cone, through the os uteri. along the same cord, to the place of its infertion in the placenta: here let your hand rest, and feel with your fingers to what part of the uterus the cake adheres; if it be loofe at the lower edge, try to bring it along; but if it adheres, begin and separate it slowly, the back of your hand being turned to the uterus, and the fore-part of your fingers towards the placenta: and for this operation the nails ought to be cut fhort and fmooth. In separating, press the ends of your fingers more against the placenta than the uterus; and if you cannot diffinguish which is which, because both feel loft, (though the uterus is firmer than the placenta, and this last more folid than coagulated blood); I fay, in this case, slide down your fingers to its edge, and conduct them by the eparated part, pressing it gently from the uteus, until the whole is difengaged. Someimes, when part of it is separated, the rest Vol. I.

will loofen and come along if you pull gently at the detached portion; but if this is not effected with eafe, let the whole of it be feparated in the most cautious manner: some times also, by grasping the inside of the placenta with your hand, the whole will be loofened without further trouble. As the placenta comes along, flide down your hand and take hold of the lower edge, by which it must be extracted, because it is too bulky to be brought away altogether in a heap; and let it be delivered as whole as possible, keeping your thumb or fingers fixed upon the navel-firing, by which means laceration is often prevented. and or days bear out good

When the woman lies on her back, and the placenta adheres to the left fide of the uterus, it will be most commodious to separate the cake with the right-hand; whereas the left-hand is most conveniently used when the placenta adheres to the right fide of the womb; but when it is attached to the fore-part, back, or fundus, either hand will answer the purpose.

That part of the uterus to which the placenta adheres, is kept still distended, while all

the rest of it is contracted.

The nearer the adhesion is to the os internum, the easier is the placenta separated, and vice versa; because it is difficult to reach up to the fundus, on account of the contraction of the os internum and lower part of the womb, which are not stretched again without bush great force, after they have been contracted hen of for any length of time.

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When therefore the placenta adheres to the fundus, and all the lower part of the womb is strongly contracted, the hand must be forced up in form of a cone into the vagina, and then gradually dilate the os internum and inferior part of the uterus. If great force is required. exert it flowly, resting between whiles that the hand may not be cramped, nor the vagina in danger of being tore from the womb; for in this case the vagina will lengthen considerably upwards.

While you are thus employed, let an affiftant press with both hands on the woman's belly, or while you push with one hand, press with the other in order to keep down the uterus, else it will rise high up, and roll about like a large ball, below the lax parietes of the abdomen, fo as to hinder you from effecting

the necessary dilatation.

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When you have overcome this contraction, and introduced your hand into the fundus, feparate and bring the placenta along, as above directed; and should the uterus be contracted in the middle like an hour-glass, a circumstance that fometimes, though rarely, happens,

the fame method must be practifed.

In every case, and especially when the platenta hath been delivered with difficulty, intoduce your hand after its extraction, in orction der to examine if any part of the uterus be puleddown and inverted; and if that be the case, pull it up and reduce it without loss of time; acted hen clear it of the coagulated blood, which therwise may occasion violent after-pains.

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For the most part, in ten, fifteen, or twenty minutes, more or less, the placenta will come away of itself; and though some portion of it, or of the membranes, be lest in the uterus, provided no great flooding ensues, it is commonly discharged in a day or two, without any detriment to the woman: but at any rate, if possible, all the secundines ought to be extracted at once, and before you leave your patient,

in order to avoid reflections.

I find that, both amongst the ancients and moderns, there have been different opinions and directions about delivering the placenta; fome alleging, that it should be delivered flowly, or left to come of itself; others, that the hand should be immediately introduced into the uterus, to separate and bring it away. Before we run into extremes of either fide, it should be considered how nature of herself acts in these cases. We find, in the common course of labours, that not once in fifty or an hundred times there is any thing more to be done than to receive the child. Some of the ancients have alleged, that no danger happens, on this account, oftener than once in one thousand labours: and as nature is, for the most part, fufficient of itself in such cases, it is very rare, perhaps not once in twenty or thirty times, that I have occasion to separate, as it generally comes down by the common affiltance of pull ing gently at the funis, and the efforts of the woman. I also find, that the mouth of the womb is as eafily dilated fome hours after deli very, as at any other time; fo, in my opinion

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we ought to go in the middle way, never to affift but when we find it necessary; on the one hand, not to torture nature when it is self-fufficient; nor delay it too long, because it is possible that the placenta may sometimes, the seldom, be retained several days; for if the uterus should be instaned from any accident, and the woman be lost, the operator will be blamed for leaving the after-birth behind. See Collect. XXIII.

CHAP. III. Vandelde lieu

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Of Laborious Labours.

SECT. I. How LABORIOUS LABOURS are occa-

In the foregoing sheets, which treat of natural labours, I have described the most easy and simple method of managing the woman, delivering the child, and extracting the placenta; but, as it sometimes happens, that we must use extraordinary assistance for the preservation of the woman or child, or both, I must proceed to give directions how to behave in the laborious births, which more frequently occur than the preternatural.

A general outcry hath been raised against gentlemen of the profession, as if they delighted in using instruments and violent methods in the course of their practice; and this clamour hath proceeded from the ignorance of such as do not know that instruments are some-

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times absolutely necessary, or from the interested views of some low, obscure, and illite. rate practitioners, both male and female, who think they find their account in decrying the practice of their neighbours. It is not to be denied, that mischief has been done by instruments in the hands of the unfkilful and unwary; but I am perfuaded that every judicious practitioner will do every thing for the fafety of patients before he has recourse to any violent method either with the hand or instrument. tho' cases will occur in which gentle methods will absolutely fail. It is therefore necessary to explain those reinforcements which must be used in dangerous labours; though they ought by no means to be called in, except when the life of the mother or child, or both, is evidently at stake; and even then managed with the utmost caution. For my own part, I have always avoided them as far as I thought confiftent with the fafety of my patients, and ftrongly inculcated the fame maxim upon those who have submitted to my instructions.

All those cases in which the head of the child presents, and cannot be delivered in the natural way described in chap. ii. sect. 2. of this book, are accounted more or less laborious, according to the different circumstances from which the difficulty arises: and these commonly are, first, great weakness, proceeding from the loss of appetite and bad digestion; frequent vomitings, diarrheas or dysenteries, shootings, or any other disease that may exhaust the patient; as also the fatigue she may have

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Secondly, From excessive grief and anxiety of mind, occasioned by the unseasonable news of fudden misfortune in time of labour; which often affect her so as to carry off the pains, and endanger her finking under the flock.

Thirdly, From the rigidity of the os uteri, vagina, and external parts, which commonly happens to women in the first birth, especially to those who are about the age of forty: tho it may be also owing to large callosities, produced from laceration or ulceration of the parts; or to glands and scirrhous tumours that: block up the vagina. Detthor vige still entitu

Fourthly, When the under-part of the uterus is contracted before the shoulders, or the

body entangled in the navel-string. b and a sent

Fifthly, From the wrong prefentation of the child's head: that is, when the forehead is towards the groin or middle of the os pubis; when the face prefents with the chin to the os pubis, ischium, or facrum; when the crown of the head rests above the os pubis, and the forehead or face is pressed into the hollow of the facrum; and lastly, when one of the ears presents. The reput one remain beautiful and income

Sixthly, From the extraordinary offification of the child's head, by which the bones of the kull are hindered from yielding as they are forced into the pelvis; and from a hydrocephalus or dropfy, distending the head to such a degree, that it cannot pass along until the water is discharged. Analysis at the contribution of

H 4 Seventhpelvis, which often occurs in very little women, or fuch as have been ricketty in their childhood. See Collect. XXIV, to XXX. and Tab. XXVIII.

In all these cases, except when the pelvis is too narrow and the head too large, provided the head lies at the upper part of the brim, or (though preffed into the pelvis) can be eafily pushed back into the uterus, the best method is to turn the child and deliver by the feet, according to the directions which shall be given in the fequel: but if the head is pressed into the middle or lower part of the pelvis, and the uterus strongly contracted round the child, delivery ought to be performed with the forceps; and in all the feven cases, if the woman is in danger, and if you can neither turn nor deliver with the forceps, the head must be opened and delivered with the crotchets. Laborious cases, from some of the above-recited causes, happen much oftener than those we call preternatural; but those which proceed from a narrow pelvis or a large head, are of the worst consequence. These cases demand greater judgment in the operator than those in which the child's head does not prefent; because in these last we know that the best and fafest method is to deliver by the feet; whereas, in laborious births, we must maturely confider the cause that retards the head from coming along, together with the necessary asfistance required; we must determine when we ought to wait patiently for the efforts of nature. Seventh

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nature, and when it is absolutely necessary to come to her aid. If we attempt to fuccour her too foon, and use much force in the operation, fo that the child and mother, or one of the two, are loft, we will be apt to reproach ourselves for having acted prematurely, upon the supposition that if we had waited a little longer the pains might have by degrees delivered the child, or at least forced the head so low as that we might have extracted it with more fafety by the affiftance of the forceps. On the other hand, when we leave it to nature, perhaps, by the strong pressure upon the head and brain, the child is dead when delivered, and the woman fo exhausted with tedious labour, that her life is in imminent danger in this case we blame ourselves for delaying our help fo long, reflecting, that had we delivered the patient fooner, without paying fuch fcrupulous regard to the life of the child; the woman might have recovered without having run such a dangerous risk. Doubtless it is our duty to fave both mother and child if polfible; but, if that is impracticable, to pay our chief regard to the parent; and, in all dubious cases, to act cautiously and circumspectly, to the best of our judgment and skill best

If the head is advanced into the pelvis, and uterus strongly contracted round the child, great force is required to push it back into the womb, because the effort must be sufficient to stretch the uterus, so as to re-admit the head, together with your hand and arm; and

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even then the child will be turned with great

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Should you turn when the head is too large, you may bring down the body of the child, but the head will stick fast above, and cannot be extracted without the help of the forceps or crotchets, (see Tab. XXXV. XXXVI.); yet the case is still worse in a narrow pelvis, even though the head be of an ordinary size. When things are so situated, you should not attempt to turn, because in so doing you may give the woman a great deal of pain, and yourself much unnecessary satigue: you ought, therefore, to try the forceps; and if they do not succeed, diminish the size of the head, and extract it as shall be afterwards shown.

SECT. II. Of the FILLETS and FORCEPS.

E have already observed, that the greatest number of difficult and lingering labours proceed from the head's sticking fast in the pelvis, which situation is occasioned by one of the seven causes recited above. When formerly this was the case, the child was generally lost, unless it could be turned and delivered by the seet; or if it could be extracted alive, either died soon after delivery, or recovered with great difficulty from the long and severe compression of the head, while the life of the mother was endangered from the same cause as above described: for the pressure being reciprocal, the sibres and vessels of the soft parts contained in the pelvis

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are bruifed by the child's head, and the circulation of the fluids obstructed; so that a violent inflammation, and fometimes a fudden mortification, enfues. If the child could not be turned, the method practifed in these cases was to open the head and extract with the crotchet; and this expedient produced a general clamour among the women, who obferved, that when recourse was had to the asfistance of a man-midwife, either the mother or child, or both, were loft. This censure, which could not fail of being a great discouragement to male practitioners, stimulated the ingenuity of feveral gentlemen of the profession, in order to contrive some gentler method of bringing along the head, fo as to fave the child, without any prejudice to the mother.

Their endeavours have not been without fuccess: a more safe and certain expedient for this purpose hath been invented, and of late brought to greater perfection in this than in any other kingdom; fo that if we are called in before the child is dead, or the parts of the woman in danger of a mortification, both the fætus and mother may frequently be happily faved. This fortunate contrivance is no other than the forceps, which was, as is alleged, first used here by the Chamberlains, by whom it was kept as a nostrum, and after their decease to imperfectly known as to be feldom applied with fuccess: so that different practitioners had recourse to different kinds of fillets or lacks. Blunt hooks also of various make were invented in England, France, and other parts. H 6 The

The forceps, fince the time of Dr Chamberlain, have undergone feveral alterations, particularly in the joining, handles, form, and

composition.

The common way of using them formerly was by introducing each blade at random, taking hold of the head any how, pulling it straight along, and delivering with downright force and violence; by which means both os internum and externum were often tore, and the child's head much bruised. On account of these bad consequences, they had been altogether disused by many practitioners, some of whom endeavoured in lieu of them to introduce divers kinds of fillets over the child's head; but none of them can be so easily used, or have near so many advantages, as the forceps, when rightly applied and conducted, according to the directions that shall be laid down in the next section.

Mr Chapman, as mentioned in the introduction, was the first author who described the forceps, with the method of using them; and we find in the observations of Gistard, several cases in which he delivered and saved the child by the assistance of this instrument. A forceps was also contrived at Paris, a drawing of which may be seen in the Medical Eslays of Edinburgh, in a paper communicated by Mr Butter surgeon: but after Mr Chapman had published a delineation of his instrument, which was that originally used by the Chamberlains, the French adopted the same species, which among them went under the

the denomination of Chapman's forceps. For my own part, finding in practice that by the directions of Chapman, Giffard, and Gregoire at Paris, I frequently could not move the head along without contufing it and tearing the parts of the woman; for they direct us to introduce the blades of the forceps where they will easiest pass, and, taking hold of the head in any part of it, to extract with more or lefs force according to the refistance; I began to confider the whole in a mechanical view, and reduce the extraction of the child to the rules of moving bodies in different directions. In consequence of this plan, I more accurately furveyed the dimensions and form of the pelvis, together with the figure of the child's head, and the manner in which it paffed along in natural labours: and from the knowledge of these things, I not only delivered with greater case and safety than before, but also had the fatisfaction to find, in teaching, that I could convey a more distinct idea of the art in this mechanical light than in any other; and particularly give more fure and folid directions for applying the forceps, even to the conviction of many old practitioners, when they reflected on the uncertainty attending theold method of application. From this knowledge, too, joined with experience and hints which have occurred and been communicated to me, in the course of teaching and practice, I have been led to alter the form and dimenfions of the forceps, so as to avoid the inconto a veniences.

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veniences that attend the use of the former kinds. See Tab. XXXVII.

The consideration of mechanics, applied to Midwifery, is likewise in no case more useful than when the child must be turned and delivered by the seet; because there we are principally to regard the contraction of the uterus, the position of the child, and the method of moving a body confined in such a manner: but I have advanced nothing in mechanics but what I find useful in practice, and in conveying a distinct notion of the several difficulties that occur to those who are or have been under my instruction, for whom this treatise is

principally defigned.

The lacks or fillets are of different kinds, of which the most simple is a noose made on the end of a fillet or limber garter: but this can only be applied before the head is fast jammed in the pelvis, or when it can be pushed up and raifed above the brim. The os externum and internum having been gradually dilated, this noofe must be conveyed on the ends of the fingers, and shipped over the fore and hindhead. There are also other kinds differently. introduced upon various blunt instruments. too tedious either to describe or use; but the most useful of all these contrivances is a fillet,. made in form of a sheath, mounted upon a piece of flender whalebone about two feet in length, which is easier applied than any other expedient of the same kind. See Tab. XXXVIII.

When the head is high up in the pelvis, if

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the woman has been long in labour, and the waters discharged for a considerable time, the uterus being strongly contracted so as that the head and shoulders cannot be raifed, or the child turned to be delivered by the feet, while the mother is enfeebled and the pains fo weak, that, unless affished, she is in danger of her life; also when the os internum, vagina, and labia pudendi, are inflamed and tumefied; or when there is a violent discharge of blood from the uterus, provided the pelvis is not too narrow, nor the head too large, this fillet may be fuccefsfully used; in which case, if the os externum and internum are not already fufficiently open, they must be gradually dilated as much as possible by the hand, which at the same time must be introduced and paffed along the fide of the head, in order to ascertain the position thereof. This being known, let the other hand introduce the double of the whale-bone and fillet over the face and chin, where you can have the best purchase, and where it will be least apt to slip and lofe its hold. This application being effected, let the hand be brought down, and the whalebone drawn from the sheath of the fillet, which (after the ends of it are tied together) must be pulled during every pain, pressing at the same time with the other hand upon the opposite part of the head, and using more or less force according to the resistance.

The disadvantage attending all fillets, is the difficulty in introducing and fixing them: and though this last is easier applied than the others,

others, yet when the vertex prefents, the child's chin is so pressed to the breast, that it is often impracticable to infinuate the fillet between them, and if it is fixed upon the face or hind-head it frequently flips off in pulling. But, granting it commodiously fixed, when the head is large or the pelvis narrow, fo that we are obliged to pull with great force, the fillet will gall and even cut the foft parts to the very bone; and if the child comes out of a fudden in consequence of violent pulling, the external parts of the woman are in great danger of sudden laceration: but if the head is fmall, and comes along with a moderate force, the child may be delivered by this contrivance, without any bad confequence; tho' in this cafe, we find by experience, that unless the woman has fome very dangerous fymptom, the head will in time flide gradually down into the pelvis, even when it is too large to be extracted with the fillet or forceps, and the child be fafely delivered by the labour-pains, although flow and lingering, and the mother feems weak and exhausted, provided she be supported with nourishing and strengthening cordials, tell by moil nwark and and sale sale

not to imagine that I am more bigotted to any one contrivance than to another. As my chief study hath been to improve the art of Midwifery, I have considered a great many different methods, with a view of sixing upon that which should best succeed in practice: I have tried several kinds of lacks, which have been

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been from time to time recommended to me: and in particular, the last mentioned fillet, which was communicated to me by the learned Dr Mead in 1743. As this fillet could, in all appearance, be more eafily introduced than any other, I, for several years, carried it with me when I was called in difficult cases, and sometimes used it accordingly: but I generally found the fixing of this, as well as all other lacks, fo uncertain, that I was obliged to have recourse to the forceps, which being introduced with greater eafe, and fixed with more certainty, feldom failed to answer the purpose better than any other method hitherto found out: but let not this affertion prevent people of ingenuity from employing their talents in improving these or any other methods that may be fafe and ufeful; for daily experience proves that we are still imperfect, and very far from the ne plus ultra of discovery in arts and sciences; though I hope every gentleman will despile and avoid the character of a selfish fecret-monger.

As the head in the 6th and 7th cases is forced along the pelvis, commonly in these laborious cases the bones of the cranium are so compressed, that they ride over one another, so that the bulk of the whole is diminished, and the head, as it is pushed forward, is, from a round, altered into an oblong figure: when therefore it is advanced into the polvis, where it slicks fast for a considerable time, and cannot be delivered by the labour-pains, the forceps may be introduced with great ease and safety, like

a pair of artificial hands, by which the head is very little (if at all) marked, and the woman very feldom tore. But if the head is detained above the brim of the pelvis, or a finall por. tion of it only farther advanced, and it appears that the one being too narrow, or the other too large, the woman cannot be delivered by the strongest labour-pains: in that case the child cannot be faved, either by turning and bring. ing it by the feet, or delivered by the application of fillet or forceps; but the operator mult unavoidably use the disagreeable method of extracting with the crotchet. Nevertheless, in all these cases, the forceps ought first to be tried; and fometimes they will fucceed beyond expectation, provided the birth is retarded by the weakness of the woman, and the second, third, fourth, or fifth obstructions. But they cannot be depended upon, even when the vertex presents, with the forehead to the fide or back part of the pelvis, and (though the woman has had strong pains for many hours after the membranes are broke) the head is not forced down into the pelvis, or at least but an inconfiderable part of it refembling the fmall end of a fugarloaf. For, from these circumstances, you may conclude, that the largest part of it is still above the brim, and that either the head is too large or the pelvis too narow. Even in these cases, indeed, the last fillet, or a long pair of forceps, may take fuch firm hold, that with great force and the strong purchase the head will be delivered: but fuch violence is commonly fatal to the woman, by caufing fuch an inflammation, tion, and perhaps laceration, of the parts, as is attended with mortification. In order to disable young practitioners from running such risks, and to free myself from the temptation of using too great force, I have always used and recommended the forceps so short in the handles, that they cannot be used with such violence as will endanger the woman's life; though the purchase of them is sufficient to extract the head when one half or two-thirds of of it are equal to or past the upper or narrow

part of the pelvis.

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When the head is high the forceps may be locked in the middle of the pelvis; but in that case great care must be taken in feeling with the fingers all round, that no part of the vagina be included in locking. Sometimes, when the head rests, or is pressed too much on the fore-part or fide of the pelvis, either at the brim or lower down, by introducing one blade it may be moved farther down, provided the labour-pains are strong, and the operation affifted by the fingers of the other hand applied to the opposite side of the head; but if the fingers cannot reach high enough, the belt method is to turn or move the blade towards the ear of the child, and introduce the other along the opposite side.

In a narrow pelvis I have sometimes found the head of the child thrown so much forward over the os pubis, by the jetting in of the facrum and lower vertebra of the loins, that I could not push the handles of the forceps far enough back to include within the blades the

bulky

bulky part of the head which lay over the pubes. To remedy this inconvenience, I contrived a longer pair, curved on one fide, and convex on the other: but these ought never to be used except when the head is small; for, as we have already observed, when the head is large, and the greatest part of it remains above the brim, the parts of the woman may be inflamed and contufed by the exertion of too much force. Nevertheless, this kind of forceps may be advantageously used when the face prefents and is low down, and the chin turned to the facrum; because, in that case, the occiput is towards the pubes, fo that the ends of the blades can take firmer hold of the head; but then the chin cannot be turned below the pubes fo eafily with these as with the other kind, nor the hindhead be brought below these last bones. See Tab. XXVI.

SECT. III. General Rules for using the FORCEPS,

vd believs northrow THE farther the head is advanced in the pelvis, the easier it is delivered with the forcep; because then, if in the 6th-or 7th case, it is changed from a round to an oblong figure, by being forced along by the labourpains; on the contrary, when the head remains high up, resting upon the brim of the pelvis, the forceps are used with greater difficulty and uncertainty.

The os externum must be gradually opened by introducing the fingers one after another e

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in form of a cone, after they have been lubricated with pomatum, moving and turning them in a femicircular motion, as they are pushed up. If the head is so low down that the hand cannot be introduced high up in this form, let the parts be dilated by the fingers turned in the direction of the coccyx, the back of the hand being upwards, next to the child's head: the external parts being fulliciently opened to admit all the fingers, let the back of the hand be turned to the perinæum, while the fingers and thumb, being flattened, will flide along betwixt the head and the os facrum. If the right-hand be used, let it be turned a little to the left fide of the pelvis, because the broad ligament and membrane that fill up the space between the facrum and ischia, will yield and allow more room for the fingers to advance; for the fame reason, when the lefthand is introduced, it must be turned a little to the right fide. Having gained your point fo far, continue to push up, until your fingers pass the os internum; at the same time, with the palm of your hand, raife or fcoop up the head, by which means you will be more at liberty to reach higher, dilate the internal parts, and distinguish the situation and size of the head, together with the dimensions of the pelvis: from which investigation you will be able to judge whether the child ought to be turned and brought by the feet, or delivered with the forceps; or, if the labour-pains are strong, and the head presents tolerably fair, withwithout being jammed in the pelvis, you will resolve to wait some time, in hope of seeing the child delivered by the labour-pains, especially when the woman is in no immediate danger, and the chief obstacle is the rigidity of the

parts. he said we benefit of street and

The position of the head is diffinguished by feeling for one of the ears, the fore or fmooth part of which is towards the face of the child: if it cannot be ascertained by this mark, the hands and fingers must be pushed farther up, to feel for the face or back part of the neck; but if the head cannot be traced, the observation must be taken from the fontanel or that part of the cranium where the lambdoidal croffes the end of the fagittal future. When the ears of the child are towards the fides of the pelvis, or diagonal, the forehead being either to the facrum or pubes, the patient mult lie on her back, with her breech a little over the bed, her legs and thighs being supported as directed in chap. ii. fect. 1. and chap. iv. fect. 4. If one ear is to the facrum, and the other to the pubes, she must be laid on one fide, with her breech over the bed, as before, her knees being pulled up to her belly, and a pillow placed between them; except when the upper part of the facrum jets too much forward, in which case case she must lie upon her back, as above described.

The blades of the forceps ought always, if possible, to be introduced along the ears; by which means they approach nearer to each

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other, gain a firmer hold, and hurt the head less than in any other direction: frequently, indeed, not the least mark of their application is to be perceived; whereas, if the blades are applied along the forehead and occiput, they are at a greater distance from each other, require more room, frequently at their points press in the bones of the skull, and endanger a laceration in the os externum of the woman. See Tab. XVI.

The woman being laid in a right position for the application of the forceps, the blades ought to be privately conveyed between the feather-bed and the cloaths, at a small distance from one another, or on each fide of the patient; that this conveyance may be the more eafily effected, the legs of the instrument ought to be kept in the operator's fide-pockets. Thus provided, when he fits down to deliver, let him forcad the sheet that hangs over the bed, upon his lap, and, under that cover, take out and dispose the blades on each side of the patient; by which means he will often be able to deliver with the forceps, without their being perceived by the woman herfelf or any other of the affiftants. Some people pin a sheet to each shoulder, and throw the other end over the bed, that they may be the more effectually concealed from the view of those who are prefent: but this method is apt to confine and embarrass the operator. At any rate, as women are commonly frightened at the very name of an instrument, it is advisable to con-

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ceal them as much as possible, until the character of the operator is fully established.

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The different Ways of using the Forcers.

NUMB. I. When the Head is down to the OB EX-

TITHEN the head presents fair, with the VV forehead to the facrum, the occiput to the pubes, and the ears to the fides of the pelvis, or a little diagonal; in this case, the head is commonly pretty well advanced in the balin, and the operator feldom miscarries in the use of the forceps. Things being thus fituated, let the patient be laid on her back, her head and shoulders being somewhat raised, and the breech advanced a little over the fide or foot of the bed, while the affiftants, fitting on each fide, support her legs, at the same time keeping her knees duly feparated and raifed up to the belly, and her lower parts always covered with the bed-cloaths, that she may not be apt to catch cold. In order to avoid this inconvenience, if the bed is at a great distance from the fire, the weather cold, and the woman of a delicate constitution, a chafing-dish with charcoal, or a vessel with warm water, should be placed near or under the bed. These precautions being taken, let the operator place himself upon a low chair, and having lubricated with pomatum the blades of the forceps, and also his right hand and fingers, slide first the hand

hand gently into the vagina, pushing it along in a slattened form, between that and the child's head, until the singers have passed the os internum; then, with his other hand, let him take one of the blades of the forceps from the place where it was deposited, and introduce it betwixt his right hand and the head; if the point or extremity of it should stick at the ear, let it be slipt backward a little, and then guided forwards with a slow and delicate motion: when it shall have passed the uteri, let it be advanced still farther up, until the rest at which the blades lock into each other be close to the lower part of the head, or at least within an inch thereof.

Having in this manner introduced one blade, let him withdraw his right hand, and infinuate his left in the fame direction, along the other fide of the head, until his fingers shall have passed the os internum; then taking out the other blade from the place of concealment, with the hand that is difengaged, let it be applied to the other fide of the child's head, by the fame means employed in introducing the first; then the left hand must be withdrawn, and the head being embraced between the blades, let them be locked in each other. Having thus secured them, he must take a firm hold with both hands, and when the pain comes on, begin to pull the head along from fide to fide; containing this operation during every pain until the vertex appears through the os externum, and the neck of the child can be felt with the finger below the os pu-VOL. I. bis:

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bis; at which time the forehead pushes out the perinæum like a large tumour: then let him stand up, and raising the handles of the forceps, pull the head upwards also, that the forehead being turned half round upwards, the perinæum and lower parts of the os externum

may not be tore.

In stretching the os externum or internum we ought to imitate nature: for, in practice, we find, that when they are opened slowly, and at intervals, by the membranes with the waters, or the child's head, the parts are feldom inflamed or lacerated; but in all natural labours, when these parts are suddenly opened, and the child delivered by strong and violent pains, without much intermission, this missortune sometimes happens, and the woman is afterwards in great pain and danger.

We ought therfore, when obliged to dilate those parts, to proceed in that flow, deliberate manner: and though, upon the first trial, they feel fo rigid, that one would imagine they could never yield or extend; yet, by stretching with the hand and resting by intervals, we can frequently overcome the greatest refistance. We must also, in such cases, be very cautious, pulling flowly, with intermissions, in order to prevent the fame laceration: for which purpofe, too, we ought to lubricate the perinuæm with pomatum during those short intervals, and keep the palm of one hand close pressed to it and the neighbouring parts, while with the other we pull at the extremity of the handle of the forceps; by which means we preferve

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ferve the parts, and know how much we may venture to pull at a time. When the head is almost delivered, the parts thus stretched must be slipped over the forehead and face of the child, while the operator pulls upwards with the other hand, turning the handles of the forceps to the abdomen of the woman. This method of pulling upwards raifes the child's head from the perinæum, and the halfround turn to the abdomen of the mother brings out the forehead and face from below; for when that part of the hind-head which is joined to the neck rests at the under part of the os pubis, the head turns upon it as upon an axis. In preternatural cases also, the body being delivered, must in the same manner be raifed up over the belly of the mother, and at the same time the perinæum slipt over the face and forehead of the child.

In the introduction of the forceps, let each blade be pushed up in an imaginary line from the os externum to the middle space betwixt the navel and scrobiculus cordis of the woman; or, in other words, the handles of the forceps are to be held as far back as the perinæum will allow. The introduction of the other hand to the opposite side, will, by pressing the child's head against the first blade, detain it in its proper place till the other can be applied; or, if this pressure should not seem sufficient, it may be supported by the operator's knee.

When the head is come low down, and cannot be brought farther, because one of the shoulders rest above the os pubis, and the

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other upon the upper-part of the facrum, let the head be strongly grasped with the forceps, and pushed up as far as possible, moving from blade to blade as you push up, that the shoulders may be the more easily mo. ved to the fides of the pelvis, by turning the face or forehead a little towards one of them: then the forehead must be brought back again into the hollow of the facrum, and another effort made to deliver: but, should the difficulty remain, let the head be pushed up again, and turned to the other fide; because it is uncertain which of the shoulders rests on the os pubis or facrum. Suppose, for example, the right shoulder of the child sticks above the os pubis, the forehead being in the hollow of the facrum: in this case, if the forehead be turned to the right-hand fide of the woman, the shoulder will not move; whereas, if it be turned to the left, and the head at the fame time pushed a little upwards, so as to raise and disengage the parts that were fixed, the right shoulder being towards the right-hand side and the other to the left fide of the brim of the pelvis, when the forehead is turned back again to the hollow of the facrum, the obstacle will be removed, and the head be more eafily dellvered. This being performed, let the forceps be unlocked, and the blades disposed cautiously under the cloaths fo as not to be discovered; then proceed to the delivery of the child, which, when the navel-string is cut and tied, may be committed to the nurse. The next care is to wipe the blades of the forceps fingly, under

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foreh hollo der the cloaths, slide them warily into your

pockets, and deliver the placental

Though the forceps are covered with leather, and appear so simple and innocent, I have given directions for concealing them, that young practitioners, before their characters are fully established, may avoid the calumnies and misrepresentations of those people who are apt to prejudice the ignorant and weak-minded against the use of any instrument, though ever so necessary, in this profession; and who, taking the advantage of unforeseen accidents which may afterwards happen to the patient, charge the whole missortune to the innocent operator. See Collect. XXVII. and Tab. XIV. XVIII. XVIII. XIX.

NUMB. II. When the Forehead is to the Os Pubis.

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WHEN the forehead, instead of being towards the facrum, is turned forwards to the os pubis, the woman must be laid in the same position as in the former case; because here also the ears of the child are towards the fides of the pelvis, or a little diagonally fituated, provided the forehead is towards one of the groins. The blades of the forceps being introduced along the ears, or as near them as possible, according to the foregoing directions, the head must be pushed up a little, and the forehead turned to one fide of the pelvis; thus let it be brought along until the hindhead arrives at the lower part of the ischium: then the forehead must be turned backward, into the hollow of the facrum, and even a quarter or more:

more to the contrary fide, in order to prevent the shoulders from hitching on the upper part of the os pubis or facrum, fo that they may be still towards the fides of the pelvis; then let the quarter-turn be reversed, and the forehead being replaced in the hollow of the facrum, the head may be extracted as above. In performing these different turns, let the head be pushed up or pulled down occasionally, as it meets with least refistance. In this case, when the head is fmall, it will come along as it presents; but if large, the chin will be so much preffed against the breast, that it cannot be brought up with the half-round turn, and the woman will be tore if it comes along. See Collect, XXVIII, and Tab. XX, XXI.

NUMB. III. When it presents fair at the Brim of the PELVIS.

WHEN the forehead and face of the child are turned to the fide of the pelvis, (in which case it is higher than in the first situation), it will be difficult, if the woman lies on her back, to introduce the forceps fo as to grasp the head with a blade over each ear; because the head is often preffed fo hard against the bones, in this position, that there is no room to infinuate the fingers between the ear and the os pubis, fo as to introduce the blades fafely on the infide of the os internum, or puth one of them up between the fingers and the child's head. When things are so situated, the best posture for the woman is that of lying on one fide, as formerly directed, because the bones will

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yield a little, and the forceps (of consequence)

may be the more eafily introduced.

Suppose her lying on her left side, and the fore-head of the child turned to the same fide of the pelvis, let the finger of the operator's right hand be introduced along the ear, between the head and the os pubis, until they pass the os internum: if the head is so immoveably fixed in the pelvis, that there is no paffage between them, let his left-hand bepushed up between the facrum and the child's head, which being raised as high as possible above the brim of the pelvis, he will have room fufficient for his fingers and forceps; then let him flide up one of the blades with the right-hand, remembering to press the handle backwards to the perinæum, that the point may humour the turn of the facrum and child's head: this being effected, let him withdraw his left-hand, with which he may hold the handle of the blade already introduced, while he infinuates the fingers of his. right hand at the os pubis, as before directed, and pushes up the other blade slowly and gently, that he may run no risk of hurting the os internum or bladder; and here also keep the handle of it as far backwards as the perinæum will allow: when the point has passed the os internum, let him slide it up farther, and join the legs by locking them together, keeping them still in a line with the middle space betwixt the navel and scrobiculus cordis. Then let him pull along the head, moving it from fide to fide, or from one ear 14

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of the child to another. When it is sufficiently advanced, let him move the fore-head into the hollow of the sacrum, and a quarter-turn farther, then bring it back into the same cavity: but if the head will not easily come along, let the woman be turned on her back, after the forceps have been fixed, and the handles sirmly tied with a garter or fillet; let the hindhead be pulled half-round outwards from below the os pubis, and the instrument and

child managed as before.

In all those cases that require the forceps, if the head cannot be raifed above the brim of the pelvis, or the fingers introduced within the os internum to guide the points of the forceps along the ears, especially at the offa pubis, ischia, or facrum, let the fingers and hand be pushed up as far as they will go along the open space betwixt the facrum and ischium; then one of the blades may be introduced, moved to and fixed over the ear, the fituation of which is already known: the other hand may be introduced, and the other blade conducted in the same manner on the opposite side of the pelvis; but before they are locked together, care must be taken that they be exactly opposite to each other, and both fufficiently introduced. In this case, if the operator finds the upper part of the facrum jetting in fo much that the point of the forceps cannot pass it, let him try with his hand to turn the fore-head a little backwards, fo that one ear will be towards the groin, and the other towards the fide of that prominence; confequently consequently there will be more room for the blades to pass along the ears: but if the fore-head should remain immoveable, or, though moved, return to its former place, let one blade be introduced behind one ear, and its fellow before the other; in which case the introduction is sometimes more easily performed when the woman lies on her back, than when she is laid on one side. See Collect. XXIX. and Tab. XIII. XVI.

NUMB. IV. When the FACE presents.

WHEN the face prefents resting on the upper part of the pelvis, the head ought to be pushed up to the fundus uteri, the child turned and brought by the feet, according to the directions that will be given when we come to treat of preternatural deliveries; because the hind-head is turned back on the shoulders. and, unless very small, cannot be pulled along with the forceps; but should it advance pretty fast in the pelvis, it will be sometimes delivered alive without any affistance. But if it descends slowly, or, after it is low down, sticks for a considerable time, the long pressure on the brain frequently destroys the child, if not relieved in time by turning or extracting with the forceps.

When the head is detained very high up, and no figns of its descending appear, and the operator, having stretched the parts with a view to turn, discovers that the pelvis is narrow and the head large, he must not proceed with turning, because, after this hath been

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performed.

performed, perhaps with great difficulty, the head cannot be delivered without the affiftance of the crotchet. No doubt it would be a great advantage in all cases where the face or fore-head presents, if we could raise the head fo as to alter the bad position, and move it so with our hand as to bring the crown of the head to present; and indeed this should al-ways be tried, and more especially when the pelvis is too narrow or the head too large, and when we are dubious of faving the child by turning: but frequently this is impossible to be done when the waters are evacuated, the uterus strongly contracted on the child, and the upper part of the head fo slippery as to elude our hold; infomuch, that even when the pressure is not great, we seldom succeed unless the head is small, and then we can fave the child by turning. If you fucceed, and the woman is strong, go on as in natural labour; but if this fails, then it will be more advisable to wait with patience for the descent of the head, fo as that it may be delivered with the forceps, and confequently the child may be faved: but if it still remains in its high fituation, and the woman is weak and exhaufted, the forceps may be tried; and should they fail, recourse must be had to the crotchet, because the mother's life is always to be more regarded than the fafety of the child.

When the face of the child is come down, and sticks at the os externum, the greatest part of the head is then squeezed down into the pelvis, and, if not speedily delivered, the

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child is frequently lost by the violent compression of the brain; besides, when it is so low down, it seldom can be returned on account of the great contraction of the uterus. In this case, when the chin is turned towards the os pubis, at the lower part of that bone, the woman must be laid on her back, the forceps introduced as formerly directed in the first case, and when the chin is brought out from under the os pubis the head must be pulled half-round upwards; by which means the fore and hind head will be raised from the perinaum, and the under part of the os internum.

prevented from being tore.

If the chin points to either fide of the pelvis, the woman must be laid on her side: the blades of the forceps introduced along the ears, one at the os pubis and the other at the facrum; and the chin, when brought lower down, turned to the pubis, and delivered: for the pelvis being only two inches in depth at this place, the chin is eafily brought from under it, and then the head is at liberty to be turned half-round upwards; because the chin, being difengaged from this bone, canbe pulled up over it externally; by which means two inches of room at least will be gained for the more easy delivery of the fore and hind head, which are now preffed against the perinaum. When the chin is towards the facrum, and the hind head preffed back betwixt the shoulders, so that the face is kept from rising up below the os pubis, the head must be pushed up with the hand to the

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upper part of the pelvis, and the forceps introduced and fixed on the ears; the hindhead must be turned to one fide of the pelvis, while the chin is moved to the other fide, and, if possible, to the low spart of the ischium; then the hind-head must be brought into the hollow of the facrus with the chin below the os pubis, and descrete as above directed. If this cannot be described, let the operator try with the forceps to sull down the hind-head below the os pubis, and at the same time with the singers of the other hand push the face and forehead backwards and upwards into the hollow of the facrum.

of the pelvis, the fore-head is squeezed against the os pubis, while the hind-head is pressed upon the back betwixt the shoulders; so that the head cannot be delivered unless the occiput can be brought out from below the os pubis, as formerly described. See Tab. XXIII.

XXV. XXVI.

NUMB. V.

THE fum of all that has been faid on this head, may be comprehended in the following

general maxims.

Young practitioners are often at a loss to know and judge by the touch in the vagina, when the head is far enough down in the basin for using the forceps. If we were to take our observations from what we feel of the head at the os pubis, we should be frequently deceived, because in that place the pelvis.

pelvis is only two inches in depth, and the head will feem lower down than it really is: but if, in examining backwards, we find little or no part of it towards the facrum, we may be certain that all the head is above the brim: if we find it down as far as the middle of the facrum, one third of it is advanced; if as far down as the lower part, one half; and in this case, the largest part is equal with the brim. When it is in this fituation, we may be almost certain of succeeding with the forceps; and when the head is fo low as to protrude the external parts, they never fail. But these things will differ according to different circumstances, that may occasion a tedious delivery.

Let the operator acquire an accurate knowledge of the figure, shape, and dimensions of the pelvis, together with the shape, size, and

position of the child's head.

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Let the breech of the woman be always brought forwards a little over the bed, and her thighs pulled up to her belly, whether she lies on her side or back, to give room to apply and to move the forceps up or down or from side to side.

Let the parts be opened and the fingers pass the os internum; in order to which, if it cannot be otherwise accomplished, let the head be raised two or three inches, that the fingers may have more room: if the head can be raised above the brim, your hand is not confined by the bones; for, as we have already observed, the pelvis is wider from side to side

at the brim than at the lower part: if the fingers are not past the os uteri, it is in danger of being included betwixt the forceps and the child's head.

The forceps, if possible, should pass along the ears, because in that case they seldom or

never hurt or mark the head.

They ought to be pushed up in an imaginary line, towards the middle space between the navel and scrobiculus cordis, otherwise the ends will run against the facrum.

The forehead ought always to be turned into the hollow of the facrum, when it is not al-

ready in that fituation.

When the face prefents, the chin must be turned to below the os pubis, and the hindhead into the hollow of the facrum.

When the shoulders rest at the pubes, where they are detained, the head must be turned a large quarter to the opposite side, so as that they

may lie towards the fides of the pelvis.

The head must be always brought out with an half-round turn, over the outside of the os pubis, for the preservation of the perinæum, which must at the same time be supported with the slat of the other hand, and slide gently backwards over the head.

When the head is fo low as to protrude the parts in form of a large tumour, and the vertex hath begun to dilate the os externum, but, instead of advancing, is long detained in that situation, from any of the forementioned causes of laborious cases, and the operator cannot exactly distinguish the position of the head.

head, let him introduce a finger between the os pubis and the head, and he will frequently find the back-part of the neck, or one ear, at the fore-part or towards the fide of the pelvis. When the fituation is known, he needs not firetch the os externum, and raise the head, as formerly directed; but he may introduce the forceps, and, they being properly joined and their handles tied, pull gently during every pain, or, if the pains are gone, at the interval of four or five minutes, that the parts may be flowly dilated, as they are in the natural labour: but when the fituation cannot be known, the head ought to be raifed. The fame method may also be taken when the face presents, and is low in the pelvis, except when the chin is toward the back-part: in this cafe the head ought to be raifed likewife.

Almost all these directions are to be followed, except when the head is fmall; in which case it may be brought along by the force of pulling: but this only happens when the woman is reduced, and the labour-pains are not fufficient to deliver the child; for the lower part of the uterus may be fo ftrongly contracted before the shoulders, and so close to the neck of the child, as to prevent its advancing, even when the head is fo loofe in the pelvis, that we can fometimes push our fingers all round it: and this is oftenest the occasionof preventing the head's being delivered when low in the pelvis. The difficulty, when high up, is from the restraint at the brim; and when it passes that, the head is seldom retained

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in the lower part, unless the patient is weak, In this case we need not wait, because we are commonly certain of relieving the woman immediately with the forceps, by which you prevent the danger that may happen, both to the mother and child, by the head's continuing to lodge there too long. This case should be a caution against breaking the membranes too foon, because the uterus may contract too forcibly and too long before the shoulders: When the head in this case is advanced onethird or half-way on the outfide of the os externum, if the pains are strong, this last inconvenience is frequently remedied by introducing your two fingers into the rectum, as formerly directed. By these rules, delivery may (for the most part) be performed with ease and fafety. Nevertheless the head is sometimes fo fqueezed and locked in the pelvis, and the hairy scalp so much swelled, that it is impracticable to raise up the head so as to come at the ears or os internum, or to distinguish the futures of the skull fo as to know how the head presents. In this case the forceps must be introduced at random, and the uncertainty of the position generally removed by remembering, that in those cases where the head is fqueezed down with great difficulty, the ears are for the most part towards the os pubis and sacrum; and that the forehead feldom turns into the hollow of the facrum, before the occiput is come down to the lower part of the ischium; and then rifes gradually towards the under part of the os pubis, and the perinæum and anus

anus are forced down before it in form of a

large tumour.

On fuch occasions, the woman being laid on her fide, if one ear is to the facrum and the other to the os pubis, the blades of the forceps are to be introduced; and if they meet with any refistance at the points, they must not be forcibly thrust up, lest they pass on the outside of the os uteri and tear the vagina, which together with the womb would be included in the instrument and pulled along with the head: for this reason, if the blade does not easily pass, let it be withdrawn a little downwards, as before directed, and pushed up again, moving the point close to the head; if the earobstructs its passage, let the point be brought a little outwards: and by these cautious esfays it will at length pass without further resistance, and ought to be advanced a confiderable way in order to certify the operator that he is not on the outfide of the os internum.

When the forceps are fixed, and the operator uncertain which way the forehead lies, let him pull flowly, and move the head with a quarter-turn, first to one side and then to the other, until he shall have found the direction

in which it comes most easily along.

If at any time we find the forceps begin to flip, we must rest and push them up again gently: but if they are like to slide off at a side, untie the handles, and move them so as to take a firmer hold, fix as before, and deliver. If we are obliged to hold with both hands, the parts may be supported by the firm appli-

application of an affiftant's hand: for without fuch cautious management they will run a great risk of being lacerated; a misfortune which rarely happens when the perinaum is properly preffed back, and the head leifurely delivered. Sometimes, when the head is brought low down, you may take off the forceps, and help along with your fingers on each fide of the coccyx or in the rectum, as directed in the natural labour.

If the head is low down, the ears are commonly diagonal, or to the fides; and when the head is brought down one third or one half through the os externum, the operator can then certify himself whether the forehead is turned to the coccyx or os pubis, by feeling with his finger for the back-part of the neck or ear, betwixt the os pubis and the head; and then move the head as above directed.

Let him try to alter with his hand every bad position of the head; and if it be detained high up in the pelvis, in consequence of the woman's weakness, the rigidity of the parts, the circumvolutions or shortness of the funis, or the contraction of the uterus over the shoulders of the child, the forceps will frequently succeed when the fœtus cannot be turned: but if the head is large or the pelvis narrow, the child is feldom faved either by turning or using the forceps, until the head shall be farther advanced. And here it will not be amiss to observe, that the blades of the forceps ought to be new-covered with stripes of washed leather after they shall have been ufed

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used, especially in delivering a woman suspected of having an infectious distemper. See Collect. XXX.

SECT. V.

When and how to use the CROTCHET.

NUMB. I. The Signs of a dead Child.

THEN the head presents, and cannot be delivered by the labour-pains; when all the common methods have been used without fuccess, the woman being exhausted, and all her efforts vain; and when the child cannot be delivered without fuch force as will endanger the life of the mother, because the head is too large or the pelvis too narrow; it then becomes absolutely necessary to open the head and extract with the hand, forceps, or crotchet. Indeed, this last method formerly was the common practice when the child could not be eafily turned, and is still in use with those who do not know how to fave the child by delivering with the forceps: for this reason their chief care and study was to distinguish whether the fœtus was dead or alive; and as the figns were uncertain, the operation was often delayed until the woman was in the most imminent danger; or, when it was performed fooner, the operator was frequently accused of rashness, on the supposition that the child might in time have been delivered alive by the labour-pains. Perhaps he was sometimes conscious to himself of the justice of this imputa-

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imputation, although what he had done was

with an upright intention.

The figns of a dead fœtus were, first, The child's ceafing to move and ftir in the uterus. Secondly, The evacuation of meconium, tho' the breech is not pressed into the pelvis. Thirdly, No perceivable pulsation at the fontanel and temporal arteries. Fourthly, A large swelling or tumour of the hairy scalp. Fifthly, An uncommon laxity of the bones of the cranium. Sixthly, The discharge of a feetid ichor from the vagina, the effluvia of which furrounding the woman, gave rife to the opinion that her breath conveyed a mortified fmell. Seventhly, Want of motion in the tongue when the face presents. Eighthly, No pelceivable pulsation in the arteries of the funis umbilicalis, when it falls down below the head; nor at the wrist, when the arm prefents; and no motion of the fingers. Ninthly, The pale and livid countenance of the woman. Tenthly, A collapsing and flaccidity of the breafts. Eleventhly, A coldness felt in the abdomen, and weight, from the child's falling, like a heavy ball, to the fide on which she lies. Twelfthly, A separation of the hairy scalp on the flightest touch, and a distinct perception of the bare bones.

All or most of these signs are dubious and uncertain, except the last, which can only be observed after the sœtus hath been dead several days. One may also certainly pronounce the child's death, if no pulsation hath been selt in the navel-string for the space of twenty

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or thirty minutes; but the fame certainty is not to be acquired from the arm, unless the skin can be stripped off with ease.

NUMB. II. When the CROTCHET is to be used.

MID WIFERY is now fo much improved, that the necessity of destroying the child does not occur fo often as formerly. Indeed it never should be done, except when it is impossible to turn or to deliver with the forceps; and this is feldom the case but when the pelvis is too narrow, or the head too large to pals, and therefore rests above the brim. For this reason. it is not fo necessary for the operator to puzzle himself about dubious signs; because, in these two cases, there is no room for hesitation: for if the woman cannot possibly be delivered in any other way, and is in imminent danger of her life, the best practice is undoubtedly to have recourse to that method which alone can be used for her preservation, namely, to diminish the bulk of the head.

In this case, instead of destroying you are really saving a life; for, if the operation be delayed, both mother and child are lost.

SECT. VI. The old Method of extracting the Head.

VARIOUS have been the contrivances intended for this purpose. Some practitioners, when the head did not advance in the pelvis, introduced the speculum matricis, in order to stretch the bones asunder, and thereby increase the capacity of the basin: if, after this

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operation, the woman could not be delivered with her pains, they fixed a large screw in the head, by which they pulled with great force. Others opened the head with a large bistory, or a short broad-bladed knife in form of a myrtle leaf, or with a crooked bistory with a long handle: then a small pair of forceps with teeth were introduced; and one blade being infinuated into the opening, they laid hold on the skull, and pulled the head along: they likewise made use of different kinds of crotchets both sharp and blunt; and when the head was lower down, they practised the same expedient.

Albucasis has also given the draught of an instrument, which is both for opening and extracting the head; the point and wings are forced through the cranium, and when turned the contrary way the two wings are forced

to take hold of the infide.

There are other later contrivances used and recommended by different gentlemen of the profession, such as Mauriceau's tire-tête, Simpson's scalp-ring, and Old's terebra occulta, with the improvement made in it by Dr Burton of York: and all these instruments may be used with success, if cautiously managed, so as not to injure the woman; except the speculum matricis, which, far from answering the supposed intention of it, namely, to extend the bones of the pelvis, can serve no other purpose than that of bruising or instaming the parts of the woman.

The following method, if exactly followed

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according to the circumstances of the case, seems, of all others hitherto invented, the easiest, safest, and most certain, especially when it requires great force to extract the head.

SECT. VII. The Method of using the Scissars, Blunt Hook, and CROTCHET.

WHEN the head presents, and such is the case that the child can neither be delivered by turning nor extracted with the forceps, and it is absolutely necessary to deliver the woman to save her life, this operation must then be performed in the following manner.

The operator must be provided with a pair of curved crotchets, made according to the improvements upon those proposed by Mesnard, together with a pair of scissars about nine inches long, with rests near the middle of the blades, and the blunt hook.

NUMB. I. Of the Woman's Posture.

THE patient ought to be laid on her back or fide, in the same position directed in the use of the forceps; the operator must be seated on a low chair, and the instruments concealed and disposed in the same manner and for the same reason mentioned in treating of the forceps. The parts of the woman have already, in all likelihood, been sufficiently dilated by his endeavours to turn or deliver with the sorceps: or if no efforts of that kind have been used, because by the touch he had learned that

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that no fuch endeavours would fucceed, as in the case of a large hydrocephalus, when the bones of the cranium are often separated at a great distance from each other, or upon perceiving that the pelvis was extremely narrow; if, upon these considerations, he hath made no trials in which the parts were opened, let him gradually dilate the os externum and internum, as formerly directed.

NUMB. II.

The head is commonly kept down pretty firm, by the strong contraction of the uterus round the child; but should it yield to one side, let it be kept steady by the hand of an affistant, pressing upon the belly of the woman: let him introduce his hand, and press two singers against one of the sutures of the cranium; then take out his scissars from the place in which they were deposited, and guiding them, by the hand and singers till they reach the hairy scalp, push them gradually into it, until their progress is stopped by the rests.

It the head slips aside, in such a manner as that they cannot be pushed into the skull at the suture, they will make their way through the solid bones, if they are moved in a semi-circular turn like the motion of boring, and this method continued till you find the point firmly fixed; for if this is not observed, the

points flide along the bones.

The scissars ought to be so sharp at the points, as to penetrate the integuments and bones when pushed with a moderate force;

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but not fo keen as to cut the operator's fingers, or the vagina, in introducing them.

The sciffars being thus forced into the brain, as far as the refts at the middle of the blades. let them be kept firm in that fituation; and the hand that was in the vagina being withdrawn, the operator must take hold of the handles with each hand, and pull them afunder, that the blades may dilate and make a large opening in the skull; then they must be thut, turned, and again pulled afunder, fo as to make the incision crucial; by which means the opening will be enlarged, and fufficient room made for the introduction of the fingers: let them be afterwards closed, and introduced even beyond the rests, when they must again be opened, and turned half round from side to side, until the structure of the brain is so effectually destroyed, that it can be evacuated with eafe. This operation being performed, let the scissars be shut and withdrawn; but, if this instrument will not answer the last purpose, the business may be done by introducing the crotchet within the opening of The brain being thus destroyed, and the instrument withdrawn, let him introduce his right-hand into the vagina, and two fingers into the opening which hath been made, that if any sharp splinters of the bones remain, they may be broken off and taken out; lest they should injure the woman's vagina, or the operator's own fingers.

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Is the case be an hydrocephalus, let him fix his fingers on the inside and his thumb on the outside of the opening, and endeavour to pull along the skull in time of a pain; but, if labour is weak, he must desire the woman to assist his endeavours by forcing down: and thus the child is frequently delivered; because, the water being evacuated, the head collapses of course.

NUMB. IV.

But when the pelvis is narrow, the head requires much greater force to be brought along; unless the labour-pains are strong enough to press it down and diminish it by foucezing out the cerebrum: in this case, let the operator withdraw his fingers from the opening, and sliding them along the head, pass the os uteri; then, with his left-hand, taking one of the crotchets from the place of its concealment, introduce it along his righthand, with the point towards the child's head, and fix it above the chin in the mouth, back part of the neck, or above the ears, or in any place where it will take firm hold; having fixed the instrument, let him withdraw his righthand, and with it take hold on the end or handle of the crotchet, then introduce his left to seize the bones at the opening of the skull (as above directed), that the head may be kept steady, and pull along with both hands,

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If the head is still retained by the uncommon narrow-

narrowness of the pelvis, let him introduce his left hand along the opposite side, in order to guide the other crotchet; which being also applied, and locked or joined with its fellow in the manner of the forceps, he must pull with sufficient force, moving from side to side, and as it advances: turn the forehead into the hollow of the sacrum, and extract it with the forceps, humouring the shape of the head and pelvis during the operation, which ought to be performed slowly, with great judgment and caution: and from hence it appears absolutely necessary to know how the head presents, in order to judge how the crotchet must be fixed, and the head brought along to the best advan-

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Sometimes, in these cases, when I find that I cannot fucceed by pulling at the opening with my fingers, and if the woman has not had ftrong pains, I introduce the small end of the blunt hook into the opening, and placing my fingers against the point on the outside of the skull, pull with greater and greater force: but, as we can feldom take a firm hold in this manner, if it does not foon answer the purpose, I introduce my fingers, as above, farther, and flide the point up along the outfide above the under jaw; and have succeeded several times with this instrument, except when the pelvis was fo narrow as to require a greater force; when we must use the others. No doubt, it is better first to try the blunt hook; because the managing the point gives less trouble, and it can be easier introduced with the point to

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one fide. When the instrument is far enough advanced, this point may be turned to the head; and as a very narrow pelvis seldom occurs, the blunt hook will commonly succeed.

Soon after the second edition of this treatise was published, I contrived a sheath to cover the sharp point of the curved crotchets, which may be introduced and used in the same manner as the blunt hook; the sheath may be taken off or kept on as there is occasion.

If, when the head is delivered in this manner, the body cannot be extracted, on account of its being much fwelled, of a monstrous fize, or (which is most commonly the case) the narrowness of the pelvis; let him desist from pulling, left the head should be separated from the body, and, introducing one hand fo as to reach with his fingers to the shoulder-blades or breast, conduct along it one of the crotchets, with the point towards the fœtus, and fix it with a firm application; then withdrawing his hand, employ it in pulling the crotchet, while the other is exerted in the same manner upon the head and neck of the child: if the instrument begins to lose its hold, he must push it farther up, and fixing it again, repeat his efforts, applying it still higher and higher, until the body is extracted.

Some writers direct us to introduce the crotchet within the skull, and, pressing one hand against the point in the outside, pull along. But this is a trisling expedient; and if a good deal of force is used, the instrument tears through the thin bones, and hurts the opera-

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whereas, in the other method, there is much more certainty, and a better purchase to force along the head, which collapses and is diminished as the brain is discharged, and never comes down in a broad flattened form, according to the allegations of some people, whose ideas of these things are imperfect and confused: for, if this were the case, the same would happen when the head is forced down from behind with labour-pains into a narrow pelvis, because the pressure, in both cases, acts in the same direction; whereas we always find, both in the one and the other, that the vertex is protruded in a narrow point, and the whole head squeezed into a longish form.

Although many people have exclaimed against the crotchets as dangerous instruments, from ignorance, want of experience, or a worse principle, as formerly observed; yet I can affure the reader, that I never either tore or hurt the parts of a woman with that instrument. I have indeed several times hurt the inside of my hand by their giving way; till I had recourse to the curve kind, which in many respects have the advantage of the straight; and I am persuaded, if managed as above directed,

will never injure the patient.

Indeed, young practitioners, till they are better informed by custom and practice, may, after the head is opened, try to extract it with the small or large forceps; and if it is not very large, or the pelvis very narrow, they may deliver by squeezing and lessening the head: but,

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in my course of practice, I have been concerned in many cases, where the pelvis was so diftorted and narrow, that, even after opening the head largely, I have pulled at the bones in time of strong pains, but all to no purpose, although fome of them actually came away. Nay, after fixing a crotchet firmly above and near the chin or basis of the skull, and using a good deal of force, I have not been able to move the head lower, till at last I have been obliged to introduce the other, and by intervals increase the force of pulling to the utmost of my strength; and, before we had the curve crotchet, I have been so fatigued from the straight kind slipping their small hold so often, that I have fcarcely been able to move my fingers or arms for many hours after; and if this force had not been used, the mother must have been loft as well as the child. See Collect. XXXI, and Tab. XXVIII. XXXIX.

CHAP. IV. Of PRETERNATURAL LABOURS.

SECT. I.

PRETERNATURAL labour, according to the division mentioned, chap. i. sect. 5. happens when, instead of the head, some other part of the body presents to the os uteri. It has been thought by some, that all labours in which the forceps and crotchet are used ought to be ranked in this class; because the head is certainly

certainly delivered by preternatural means; and that, when the feet or breech present, and the woman is delivered without any other affistance than that of labour-pains, the case ought to be accounted natural. However, this division would embarrass and confuse the young beginners more than the other which I have chosen to follow, namely, that of reckoning by the manner in which the child is delivered, and calling all-those births preternatural in which the body is delivered before the head. Preternatural labours are more or less difficult according to the presentation of the child, and the contraction of the uterus round its body. The nearer the head and shoulders are to the os internum or lower part of the uterus, the more difficult is the case; whereas when the head is towards the fundus, and the feet or breech near the os internum, it is more easy to turn and deliver.

To begin with the easiest of these sirst, it may be proper to divide them into three classes. First, how to manage when the feet, breech, or lower parts present. Secondly, how to behave in violent sloodings; and, when the child presents wrong before the membranes are broke, how to save the waters in the uterus, that the sectus may be the more easily turned; and what method to follow even after the membranes are broke, when all the waters are not evacuated. Thirdly, how to deliver when the uterus is strongly contracted, and the child presenting either with the fore or back parts, and lying in a circular

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form; or with the shoulders, breast, neck, face, ear, or vertex, and lying in a longish form, with the feet and breech towards the fundus of the womb, which is contracted like a long sheath, close to the body of the fœtus; and when the fore-parts of the child lie towards the fide, fundus, fore or back part of the uterus. Daventer, who practised at Dort in Holland, alleges, that preternatural as well as laborious cases proceed from the wrong pofition of the os and fundus uteri; that if the fundus hangs forwards over the os pubis, the os uteri is turned backwards towards the facrum; and that, in whatfoever direction the fundus inclines, the os uteri will be always turned to the opposite side. This opinion he grounded upon the supposition that the placenta always adheres to the fundus: but ex-perience shows, that it adheres to different parts of the womb, fometimes even to the infide of the os uteri. For the most part, indeed, the os internum is turned backwards towards the coccyx, being in a straight line with the fundus up to the middle space betwixt the navel and scrobiculus cordis.

Daventer was also of opinion, that if, upon touching, the mouth of the womb was not selt in the middle, the woman ought to be affished by opening the parts; and if this did not succeed, by turning and delivering by the feet without delay. We sometimes, indeed, meet with pendulous bellies, in which the os uteri is farther back than usual; but even in these cases, when the head is not very large, nor the

the pelvis narrow, and the patient is vigorous and the labour-pains strong, the woman, with a little patience, is for the most part safely delivered without any other than common assistance: or should the case prove tedious, she may be affisted in time of a pain by introducing one or two singers into the os uteri, and gradually bringing it more forwards. When the belly is very pendulous, change of position from time to time is of service, especially lying upon her back, with the shoulders low and the breech raised.

In women that are difforted, when one illum is much lower than the other, the fundus uteri will be turned to the low fide; but there the chief difficulty will proceed from

the narrowness of the pelvis.

LABOURS. When the Feet, Breech, or lower Parts of the Fætus present, and the Head, Shoulders, and upper Parts are towards the Fundis.

THESE, for the most part, are accounted the easiest, even although the uterus should be strongly contracted round the body of the child, and all the waters discharged.

If the knees or feet of the child present to the os internum, which is not yet sufficiently dilated to allow them and the body to come farther down; or, if the woman is weak, wore out with long labour, or endangered by a flooding; let the operator introduce his hand into the vagina, push up and stretch the

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os uteri, and bring along the feet; which being extracted, let him wrap a linen cloth round them, and pull until the breech appears on the outfide of the os externum. If the face or fore part is already towards the back of the uterus, let him perfift in pulling in the fame direction: but if they are towards the os pubis or one fide, they must be turned to the back-part of the uterus; and as the head does not move round equal with the body, he must make allowance for the difference in turning, by bringing the last a quarter farther than the place at which the head is to be placed; fo that the face or forehead which was towards one of the groins, will be forced to the fide of the facrum, where it joins with This quarter-turn of the body the ischium. must be again undone, without affecting the position of the head; a cloth may be wrapped round the breech, for the convenience of holding it more firmly; then placing a thumb along each fide of the spine, and with his fingers grasping the belly, let him pull along the body from fide to fide, with more or less force according to the refistance. When the child is delivered as far as the shoulders, let him slide his hand, flattened (suppose the right if the lies on her back) between its breast and the perinæum, coccyx, and facrum, of the woman, and introduce the fore or middle finger (or both, if necessary) into the mouth of the fcetus; by which means the chin will be pulled to the breast, and the forehead into the hollow of the facrum. And this expedient will

will also raise upward the hindhead, which

rests at the os pubis.

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When the fore-head is come so low as toprotrude the perinæum, if the woman lies on her back, let the operator stand up and pull the body and head of the child upwards, bringing the forehead with a half-round turn from the under part of the os externum, which will thus be defended from laceration. The application of the fingers in the child's mouth will contribute to bring the head out in this manner, prevent the os externum from hitching on the chin, help along the head, and guard the neck from being overstrained; a misfortune which would infallibly happen if the forehead should be detained at the upper part of the facrum. Nor is there any greatforce required to obviate this inconvenience, or the least danger of hurting the mouth, if the head is not large: for if the head cannot be brought along with moderate force, and the operator is afraid of injuring or overstraining the lower jaw, let him push his fingers farther up, and press on each fide of the nofe, or on the inferior edges of the fockets of the eyes. If the legs are come out, and the breech pulled into the vagina, there is no occasion for pushing up to open, but only to pull along and manage as above directed: still remembering to raise the fore-head slowly from the perinæum, which may be preffed! back with the fingers of his other hand.

In the case of a narrow pelvis, or large head, which cannot be brought along with-

out the risk of overstraining the neck, let him slide up his singers and hand into the vagina, and bring down one of the child's arms, at the same time pulling the body to the contrary side, by which means the shoulder will be brought lower down: let him run his singers along the arm, until they reach the elbow, which must be pulled downwards with an half-round turn to the other side, below the breast. This must not be done with a jerk, but slowly and cautiously, in order to prevent the dislocation, bending, or breaking, of the child's arm.

Let him again guide his fingers into the child's mouth, and try if the head will come along: if this will not succeed, let the body be pulled to the other side, so as to bring down the other shoulder; then slide up his left-hand, and, extracting the other arm, endeavour to deliver the head. If one finger of his right-hand be fixed in the child's mouth, let the body rest on that arm; let him place the left-hand above the shoulders, and put a finger on each fide of the neck: if the forehead is towards one fide at the upper part of the pelvis, let him pull it lower down, and gradually turn it into the hollow of the facrum; then stand up, and in pulling raise the body fo as to bring out the head in an half-round turn, as above directed.

Daventer and others, from a mistaken notion that the chief resistance is at the coccyx or lower part of the pelvis, have directed us to press the shoulders of the child downwards, so as to bring the hindhead first from below the es pubis: not confidering that the refistance is occasioned by the thickest part of the head being detained at the upper part of the pelvis, where the lowest vertebra of the loins and the upper part of the facrum jet inwards; and that, until the forehead hath passed into the hollow of the facrum, this method cannot succeed. The business, therefore, is to pull upwards at the back-part of the neck, which rests against the under-part of the os pubis; and by this exertion, the forehead, which is high up, will be brought down with a circular turn; after which the head feldom stops, and the fame circular motion is still the most proper, though now we can bring out the head the other way, but not before. Sometimes. indeed, I have found Daventer's method fucceed better than the other, when the head is low down, and the chief refistance is in the lower parts; but this is very feldom the cafe: however, when the forehead is hindered from coming down into the lower part of the facrum by an uncommon shape of the head or pelvis, and we cannot extract it by bringing it out with an half-round turn at the os pubis, we must try to make this turn in the contrary direction; and instead of introducing our fingers into the child's mouth, let the breaft of it rest on the palm of your lest hand, (the woman being on her back), and placing the right on its shoulders, with the singers on each fide of the neck, press it downwards to the perinæum. In consequence of this presfure.

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fure, the face and chin being within the perinæum, will move more upwards, and the head come out with an half-round turn from below the os pubis: for the centre of motion is now where the fore-part of the neck presses at the perinæum; whereas, in the other method, the back-part of the neck is against the lower part of the os pubis, on which the head turns

If the forehead is not turned to one fide, but flicks at the upper part of the facrum, especially when the pelvis is narrow; let him endeavour, with his finger in the mouth, to turn it to one fiderof the jetting-in of the facrum, because the pelvis is wider at the sides of the brim, and bring it along as before.

If one of the child's arms, instead of being placed along the fide of the head, is turned in between the face and facrum, or between the hindhead and os pubis, the fame difficulty of extracting occurs as in a large head or narrow pelvis; and this position frequently enfues when the fore-parts of the child's body are turned from the os pubis down to the facrum. If they are turned to the left fide of the woman, the left-hand and arm are commonly brought in before the face, and vice versa; but in these cases the elbow is for the most part easily come at, because it is low down in the vagina, and then there is a noceffity for bringing down one or both arms before the head can be delivered : from whence we may conclude, that those authors are fometimes in the wrong who expressly forbid

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us to pull down the arms. Indeed, if the pelvis is not narrow, nor the head very large, and the arms lie along the fides of the head, there is feldom occasion to pull them down; because the pelvis is widest at the sides, and the membranes and ligaments that fill up the space betwixt the sacrum and ischia yield to the pressure, and make room for the passage of the head: but when they are squeezed between the head and the facrum, ischia, or offa pubis, and the head sticks in the pelvis, they certainly ought to be brought down; or even. when the head comes along with difficulty. Neither is the alleged contraction of the os. internum round the neck of the child so frequent as hath been imagined; because for the most part the contraction embraces the head and not the neck: but should the neck alone fuffer, that inconvenience may be removed by introducing the hand into the vagina, and a finger or two into the child's mouth, or on each fide of the nose; by which means also a fufficient dilatation will be preserved in the os externum, which frequently contracts on the neck as foon as the arms are brought out.

The diameter from the face or forehead to the vertex, being greater than that from the forehead to the back-part of the hindhead or neck, when the hindhead rests at the os pubis, and the forehead at the upper part of the facrum, the head can seldom be brought down until the operator, by introducing a singer into the mouth, moves the same to the side, brings the chin to the breast, and the fore-

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forehead into the hollow of the facrum: by which means the hindhead is raifed and allowed to come along with greater eafe; and in pulling, half the force only is applied to the neck, the other half being exerted upon the head, by the finger which is fixed in the mouth; so that the forehead is more easily brought out, by pulling upwards with the half-round turn from the perinæum. When the operator with his fingers in the child's mouth cannot pull down the forehead into the hollow of the facrum, let him push the fore-finger of his left hand betwixt the neck and os pubis, in order to raife the hindhead upwards; which being done, the forehead will come down with lefs difficulty, especially if he pushes up and pulls down at the same time, or alternately.

If it be discovered by the touch, that the breech presents, that the membranes are not yet broke, the woman is in no danger, the os internum not yet sufficiently dilated, and the labour-pains strong; the midwife ought to wait until the membranes, with the waters, are pushed farther down, as in the natural labours for, as they come down through the os uteri into the vagina, they stretch open the parts contained in the pelvis; and the bulk within the uterus being diminished, it contracts and comes in contact with the body of the child; so that the breech is pushed along by the mechanical force of the abdominal muscles ope-

rating upon the womb.

The fame consequence will follow even al-

though the membranes are broke; for the waters lubricate the parts as they flow off, and the breech, if not too large, or the pelvis narrow, is pushed down: In this case, when the nates present equal and fair to the os uteri, (as was formerly observed when treating of the position of the child, Book III. chap. i. sect. 1. it was most probable that one side of the fœtus was towards the fore-part and the other to the back-part of the uterus); fo it is also reasonable to conclude, that when the breech presents, it lies in the same manner, but that the fore-parts of the child are rather turned backwards to one fide of the vertebræ of the loins: in this pontion, one hip will present, and the other relt on the os pubis; but when forced along with pains, the last will be gradually moved more and more to the groin of that fide, and from thence flip down at the fide of the bafin: the lower at the same time will be forced to the other, and the hollow betwixt the thighs will rest upon the jetting-in of the os facrum, and come down in that manner; the thighs m each fide, and the back and round part of the breech, passing in below the arch of the os pubis, which is the lift position: but if the back of the child is tilted backwards, then it will be forced down in the contrary direction, and come along with more difficulty, viz. the thighs to the os pubis, and back to the acrum. When it is come down to the middle or lower part of the pelvis, let the operator atroduce the fore-finger of each hand, along the

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pull gently along during a strong pain.

If the os externum is fo contracted that he cannot take fufficient hold, let it be opened flowly, fo as to allow his hands to be pushed up with eafe: when he has infinuated a finger or two in each groin, let him place his thumbs on the thighs, if they are towards the offa pubis, fo as to obtain a firm hold; then pull along from fide to fide, and, if the back of the child is to the os pubis, continue to affift in this manner until the body and head are de-The legs being commonly stretched up along the belly and breaft, when the child is extracted as far as the shoulders, they come out of themselves, or are easily brought down; but if the belly of the child is turned to one fide, or to the os pubis, in that case, when the breech is delivered, he ought to turn the belly down to the facrum and the back to the of pubis; and that the face may be also turned to the back of the mother, let him remember the quarter extraordinary, which must be again reverfed, and then he may pull along and deliver.

If the body cannot be turned until the thighs and legs are brought down, either on account of the bulk, or because the hold on the breech is not fufficient, let him continue to pull along, until the hams appear on the outside of the os externum; then seize one of the knees with his finger and thumb, and extract that leg; and let the other be brought down in the same manner. If he attempts to pull

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out the legs before the hams arrive at this place, the thighs are always in danger of being bent or broken. When the legs are delivered, let him wrap a cloth round the breech of the child: and as the body was pulled down almost as far as the breast, before the legs could be brought out, it must be pushed up again to the navel, or above it; because, without this precaution, the shoulders would be fo much engaged in the pelvis, that it would be impracticable to make the motions formerly directed, fo as to turn the face to the back of the mother: whereas, when the body is pushdup, those turns can be effected with greater rafe, because the belly being in the pelvis, it yields easier to the form of the basin. When the face is turned properly down, let him proceed to deliver as above directed.

If the breech is detained above the pelvis, either by its uncommon magnitude or the parrowness of the basin; or if one of the nates is pushed in, while the other rests above the os pubis, facrum, or to either fide; if the woman is low and weak, the pains lingering and infufficient to force the child along; or if he is in danger from a violent flooding: in any of these cases, let him (during every pain) radually open first the os externum, and hen the os internum, with his fingers and land. Having thus gained admission, let him. buth up the breech to the fore or back part, or to one fide of the uterus, that his hand and rm may have room to flide along the foreparts or belly of the child, so as to feel the thighs.

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thighs, that will direct him to the legs, which must be brought down with his fingers, while at the same time he pushes up the hams with his thumb, that in case the legs lie straight up they may be extracted with more ease by the slection of the knee, and run the less risk of being bent, broken, or overstrained; for if they are folded downward, they are the more easily brought out.

If the breech be strongly pressed into the upper part of the pelvis, let him also push it upwards and to one side, that his hand and arm may have free passage; for the higher the breech is raised out of his way, he will be

at more freedom to extract the legs.

If both legs cannot be easily brought down, he may fafely deliver with one, of which taking hold with a linen cloth wrapped round it, let him flide up his other hand into the vagina, and a finger or two into the outside of the groin which is bent: by these means, the hip will come down the easier, and the leg which is already extracted, will not be overstrained by fustaining the whole force of pulling the body along.

If the legs lie towards the left fide of the woman, who is laid on her back, the right hand must be introduced into the uterus; I they lie to her right fide, the left-hand will better answer the purpose; and if they are towards her back or belly, either hand may be

indifferently used.

In all cases where the breech presents, the fasest practice is always to push up and bring down

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down the legs, provided the os uteri is fufficiently dilated, and the waters not wholly discharged. If the waters are evacuated, the uterus strongly contracted around the child. the breech fo low as that it cannot be returned, or fo small as to come easily along. we ought then to deliver it accordingly: but if so large as neither to be pushed up nor brought along with the affiftance of the fingers, let the operator introduce the curved handle of the blunt crotchet into one of the groins, his fingers into the other, and pull very cautiously in order to prevent a fracture or diflocation of the thigh-bone, which might otherwise happen from the use of this instrument, the blunt point of which must be fufficiently past the groin. A fillet may also be used for the same purpose.

I have, in the foregoing cases of this section, supposed the woman laid on her back, her legs supported, and breech to the bed-side; this being generally the best position for delivering the body and head. Indeed, when the child is small, she may lie on her side, and the same methods be used in delivering, provided the operator still remembers, that in this position the the ilium and ifchium of one fide are down, ght and the others up. Besides, when the breech is pushed up, in order to bring down the legs, will if they lie forwards towards the fore-part of the uterus, and the belly is pendulous, he can y be reach them with the greatest ease when she ies on one side; or, if the resistance is very great, turn her to her knees and elbows, according

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cording to Daventer's method: but, when the legs are delivered, if the child is large or the pelvis narrow, the ought to be turned upon her back, because the body and head can be better and more safely delivered by pulling up and down; and in that posture she is also kept more firm, and her thighs less in the operator's way, than when she lies upon her side. See Collect. XXII. and Tab. XXIX. XXXV.

SECT. III. The fecond Class of PRETERNATURAL LABOURS.

W HEN the membranes are broke, but the face, shoulder, or some other part of the child, being pushed into the pelvis, locks up the os internum, so as that a small quantity of the waters hath been discharged, the uterus is kept from contracting strongly round the child, which is therefore more eafily turned than it possibly can be when they all gone:

When, before the membranes are broke, the child is felt through them, presenting wrong; and at the same time the pains push them down so as to dilate the os internum, more or

lefs:

When the woman at any time in the four last months is seized with a violent slooding that cannot be restrained, and unless speedily delivered must lose her life: If labour-pains cannot be brought on by stretching the parts, delivery must be forced; but if she is in last bour, and the membranes have been pushed down

down with the waters, they may be broke; by which means the flooding is frequently diminished, and the child delivered by the labour pains.

In these three different cases, if we can prevent the strong contraction of the uterus, by keeping up the waters, we can also, for the most part, turn the child with great ease, even

in the very worst positions.

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In the first case, let the operator slowly introduce his hand into the vagina, and his fingers between that part of the child which is pushed down and the os internum: if in so doing, he perceives some of the waters coming along, he must run up his hand as quick as possible into the uterus, betxixt the inside of the membranes and the child's body; the lower part of his arm will then fill up the os externum like a plug, so that no more of the waters can pass: let him turn the child with its head and shoulders up to the fundus, the breech down to the lower part of the uterus, and the fore-parts towards the mother's back: let the hand be pushed no farther up than the middle of the child's body; because if it is advanced as high as the fundus, it must be withdrawn lower before the child can be turned; and by these means the waters will be discharged, and the uterus of consequence contract fo as to render the turning more difficult.

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In the fecond case, when the membranes are not broke, and we are certain that the child does not present fair, if the os internum is not fufficiently dilated, and the woman is in no danger, we may let the labour go on until the parts are more stretched; lubricating and extending the os externum, by degrees, during every pain. Then introducing one hand into the vagina, we infinuate it in a flattened form, within the os internum, and push up between the membranes and the uterus, as far as the middle of the womb. Having thus obtained admission, we break the membranes, by grasping and fqueezing them with our fingers; flide our hand within them, without moving the arm lower down; then turn and deliver as formerly directed: but if in any of these cases you find the head is large, or the pelvis nar-row, bring down the head into the natural position, and assist as directed in lingering or laborious cases. or ership of forth brand

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If the woman (in the third case) is attacked with a violent slooding, occasioned by a separation of all or any part of the placenta from the uterus during the last four months of pregnancy, and every method has in vain been tried to lessen and restrain the discharge, according to the directions in Book II. chap. iii. sect. 3. the operator ought to pronounce the case dangerous, and prudently declare to the

the relations of the patient, that unless she is speedily delivered both she and the child must perish; observing at the same time, that by immediate delivery they may both be saved: let him also desire the assistance and advice of some person eminent in the profession, for the satisfaction of her friends and the support of his own reputation. When there are no labour-pains, and the mouth of the womb is not dilated, it is sometimes very difficult to deliver, more especially if the os internum is

not a little lax, but feels rigid.

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If the os uteri is fo much contracted that the finger cannot be introduced, fome authors have recommended a dilator, by which it may be gradually opened fo as to admit a finger or two. Doubtless, some cases may happen in which this may be necessary; though in all those to which I have been called, when there was a necessity for forcing delivery, the mouth of the womb was open enough to receive the tip of my finger, fo that by gradual efforts I could effect a fufficient dilatation: and it is certainly a fafer method to dilate with the fingers and hand, than with an inffrument. If in stretching the os internum labour-pains are brought on, let the operator flowly proceed and encourage them: when the mouth of the womb is opened, if the head prefents and the pains are strong, by breaking the membranes the flooding will be diminished: but if she floods to such a degree as to be in danger of her life, and the dilatation does not bring on labour, at least not enough for the VOL. I. occasion,

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occasion, she must be immediately delivered in the following manner. But in the first place let her friends be apprised of the danger, and the operator beware of promising to save either mother or child: for I have known the woman die in a few minutes after delivery, although to all appearance she seemed able to undergo the operation, and the child lost from the head sticking in the pelvis: others, again, who were apparently much more weak and exhausted, have recovered, and the child hath been faved.

The operator having performed his duty in making the friends acquainted with the fituation of the case, must gently open the os externum, by introducing his fingers gradually, turning them half-round and pushing upward; then forming them with the thumb into the figure of a wedge or cone, continue to dilate flowly and by intervals, until his hand is admitted into the vagina: having thus far gained his point, let him infinuate, in the fame flow cautious manner, first one, then two fingers into the os internum, which may be dilated for as to admit the other two and the thumb, in the fame conical form, which will gradually make way for fliding the hand along between the outfide of the membranes and infide of the uterus; then he must manage as directed in the fecond case. If upon sliding up his hand upon the outlide of the membranes, he feels the placenta adhering to that fide of the womb, he must either withdraw that hand and introduce the other on the opposite fide

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in the charge and deliver The greatest danger in this case frequently proceeds from the fudden emptying of the uterus and belly: for when labour comes on of itself, or is brought on in a regular manner, and the membranes are broke, the flooding is gradually diminished; and first the child, then the placenta, is delivered by the pains; fo that the pressure or resistance is not all at once removed from the belly and uterus of the woman, which have time to contract by degrees; confequently those fainting-fits and convulsions are prevented which often proceed from a sudden removal of that compression under which the circulation was performed.

In order to anticipate these fatal symptoms. I have (sometimes successfully) ordered an. affiftant to press upon the woman's belly while the uterus was emptying; or, after having broken the membranes, turned up the head to the fundus, and brought down the legs and breech, I withdraw my arm a little to let the waters come off, though I keep my hand in the uterus for a few minutes, and do not extract the legs until I feel the womb close contracted to the child; nay, if the flooding is stopped, or even diminished, I let the child remain in the uterus perhaps ten or fifteen minutes longer, then deliver; and, if the hæmorrhagy is stayed, leave the placenta to be expelled by nature. In all these stages, however, when the flooding is violent, we must

must deliver without loss of time, remembering still the pressure upon the abdomen; for the woman is frequently so very weak, that although labour could be brought on, she would not have strength sufficient to undergo it.

The younger the woman is with child, the greater is the difficulty in opening the os internum; and more so in the first child, especially if she is past the age of thirty-five.

We should never refuse to deliver in these dangerous cases, even although the patient seems expiring; for immediately after delivery the uterus contracts, the mouths of the vessels are shut up, so that the slooding ceases, and she may recover, if she lives sive or six hours after the operation, and can be supported by frequent draughts of broth, jelly, caudle, weak cordial, and anodyne medicines, which maintain the circulation and gradually fill the

empty veffels.

If, in time of flooding, she is seized with labour-pains, or if, by every now and then stretching with your fingers the os internum, you bring on labour, by which either the membranes or head of the child is pushed down and opens the os internum, the membranes ought to be broken; so that, some of the waters being discharged, the uterus may contract and squeeze down the feetus. This may be done sooner in those women who have had children formerly, than in such as have been in labour before. If, notwithstanding this expedient, the flooding still continues,

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tinues, and the child is not like to be foon delivered, it must be turned immediately; or, if the head is in the pelvis, delivered with the forceps: but, if neither of these two methods will succeed, on account of the narrowness of the pelvis or the bigness of the head, this last must be opened and delivered with the crotchet. In all these cases let the parts be dilated slowly and by intervals, in order to prevent laceration. See Collect. XXXIII. and Tab. IX. X. XI. XII. XXXIV.

SECT. IV. The third Class of PRETERNATURAL LABOURS.

WE have already observed, that the principal difficulties in turning children and bringing them by the seet, proceeded from the contraction of the uterus and bad position of the seetus. If the child lies in a round form, whether the fore-parts are towards the os internum, or up to the sundus uteri, we can for the most part move it with the hand, so as to turn the head and shoulders to the upper part, and the breech and legs downwards: but if the child lies lengthwise, the womb being contracted around it like a long sheath, the task is more difficult; especially if the head and shoulders of the child are down at the lowest part of the uterus, with the breech and seet turned up to the fundus and

Before I proceed to the method of delivery in the following cases, it will not be improper to premise, that the woman ought to be laid

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on her back, her breech upon the fide or foot of the bed, a bolfter or pillows being laid below the feather-bed or matrafs, in order to raise it so as that the breech may be higher than the shoulders; while an affistant sits on each fide, to support her legs and thighs, as directed in chap. ii. fect. 1. chap. iii. fect. 2. and one or two more affiftants ought to fit behind, or on each fide of her shoulders, to keep her firm in that position. The operator ought to avoid all formality in point of dress, and never walk about the room with fleeves and apron; for although such apparatus may be necessary in hospitals, in private practice it conveys a frightful idea to the patient and female spectators: the more genteel and commodious dress is a loose washing night-gown, which he may always have in readiness to put on when he is going to deliver; his waiftcoat ought to be without sleeves, that his arms may have more freedom to flide up and down under cover of the wrapper; and the sleeves of his shirt may be rolled up and pined to the breaft of his waiftcoat. In natural labours, the sheet that hangs over the bed side is sufficient to keep him clean and dry, by being laid in his lap; but in those cases where he is obliged to alter his position, a sheet ought to be tucked round him, or an apron put on, but not before he is about to begin his work. If the patient is laid on a low bed, and he intends to introduce his right-hand, his best and firmest position is to kneel with his left knee on a cushion, keeping up the right

right to support his arm; if the left-hand is introduced, the reverse of this disposition must take place: if the bed or couch is high, he ought to stand, but still remember to support the elbow on the knee. These directions, howsoever trivial they may seem to old practitioners, may be serviceable to young be-

ginners.

The hand of the accoucheur or operator being introduced into the uterus, if he finds the breech below the head and shoulders, let him fearch for the legs and bring them down: but if the breech be higher than the upper parts of the child, or equal with them, he must try to turn the head and shoulders to the fundus, and the breach downwards, by pushing up the first and pulling down at last; then proceed with delivery as before directed. This is commonly executed with eafe, provided fome part of the waters still remain in the uterus; but, if the woman has been long in labour, and the waters discharged, the contraction of the womb is fo ftrong, that the child cannot be turned without the exertion of great force frequently repeated. In this case, the easiest method, both for the patient and operator, is to push up the hand gradually on that side to which the legs and thighs are turned; and even after he has reached them, if they are not very high up, let him advance his hand as far as the fundus uteri; he will thus remove the greatest obstacle, by enlarging the cavity of the womb, fo as more easily to feel and bring down the legs; then he may push up and pull.

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down, as we have prescribed above. But if the head and shoulders still continue to hinder the breech and body from coming along, and the feet cannot be brought fo low as the outfide of the os externum, while they are yet in the vagina he may apply a noofe upon one or both: for, unless the child is so small that he can turn it round by grafping the body when the head and shoulders are pushed up, and he endeavours to bring down the other parts, they will again return to the fame place, and retard delivery; whereas, if he gains a firm hold of the feet, either without the os externum or in the vagina, by means of the noofe fixed upon the ankles, he can with the other hand push up the head and shoulders, and be able in that manner to bring down the breech. He must continue this method of pushing up and pulling down, until the head and shoulders are railed to the fundus uteri: for, should he leave off too foon, and withdraw his hand, although the child is extracted as far as the breech, the head is sometimes to pressed down and engaged with the body in the passage, that it cannot be brought farther down without being tore along with the crotchet; for the breech and part of the body may block up the passage in such a manner, as that the hand cannot be introduced to raise the head.

In all cases, where the accoucheur foresees that great force will be requisite, he ought to save his strength as much as possible, beginning slowly, and resting his hand between whiles during the operation of pushing up and

and turning the child in the uterus: for if he begins to work in a hurry, and exerts his utmost strength at first, his hands will be so cramped and enervated, that he will be obliged to desist, and give them some respite; so that it may be a long time before he recovers the use of them, and even then they will be so much weakend as to be scarce able to effect delivery, which is thus impeded and delayed.

Those cases are commonly the easiest in which the fore-parts prefent, and the child lies in a round or eval form, across the uterus, or diagonally, when the head or breech is above and over the os pubis, with the legs, arms, and navel-string, or one or all of them, at the upper or lower part of the vagina, or on the outfide of the os externum. Those are more difficult in which, though the child lies in the fame round or contracted form, the back. shoulders, belly, or breast, are over the os internum: because, if we cannot move the child round, fo as to place the head to the fundus. the legs are brought down with much more difficulty than in the other case: but if the shoulder, breast, neck, ear, face, or crown of the head prefents, and the legs and breech are up to the fundus uteri, the case is still more difficult; because, in the other two, the uterus is contracted in a round form, fo that the wrong position of the child is more easily altered than in this, when the womb is contracted in a long shape, and sometimes requires valt force to stretch it so as that the head may be had bounded in the Lag on boulder railed

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The crown of the head is the worst part that can present, because in that case the feet and breech are higher, and the uterus of a longer form, than in any other. The presentation of the face is, next to this, attended with the greatest difficulty: but when the neck, shoulder, back, or breast, present, the head is turned upwards, and keeps the lower part of the womb distended; so that, upon stretching the upper part, the child's head is more easily raised to the fundus.

NUMB. I.

WHEN the fore parts of the child present. if the feet, hands, and navel-string are not detained above the os uteri, fome or all of them descend into the vagina, or appear on the outfide of the os externum. If one or more of them come down, and the child at the fame time lies in a round form across the uterus, let the accoucheur introduce his hand between them and the facrum, as directed in fect. 3. When it is past the os internum, let it rest a little, while he feels with his fingers the position of the fœtus: if the head and shoulders lie higher than the breech, he must take hold of the legs and bring them down withoutfide the the os internum: if the breech is detained above the brim of the pelvis, let him slide up the flat of his hand along the buttocks, and pull down the legs with the other hand; by which method the breech is difengaged and forced forced into the middle of the pelvis. See Tab. XXXI.

In most of those cases where the child is pressed in an oval form, if neither the head nor breech present, the head is to one side of the uterus, and the breech to the other; because, as was formerly observed, it is wider from side to side, than from the back to the fore part; and if either the head or breech is over the os pubis, the other is turned off to the side: in moving the head or shoulders to the fundus, they are raised with greater ease along the sides than at the back or fore parts, for the same reasons.

If the head and shoulders lie lower down. fo as to hinder the breech from coming along. and the legs from being extracted, let himpush up the head and shoulders to the fundus. and pull out the legs; then try, as above directed, to bring in the breech; and if it still flicks above, because the head and shoulders are again forced down by the contraction of the uterus, he must with one hand take hold of the legs that are now without the os externum, and, fliding the other into the uterus, push the head and shoulders ugain up to the fundus, while at the same time he pulls the legs and breech along with the feet. If the legs cannot be brought farther down than the vagina, because the breech is high up, let him flip a noofe over the feet round the ankles, as before observed; by which he may pull down the lower parts with one hand, while the other is employed in pushing it up, as before. By L 6 this

this double purchase the child may be turned even in the most difficult cases: but the operator, in pulling, must beware of overstrain-

ing the ligaments of the joints.

If the legs can be extracted through the os externum, let a fingle cloth, warmed, be wrapped round them, in order to yield a firmer hold to the accoucheur; but when they can be brought no lower than the neck of the uterus and vagina, he may use one of these

following nooles.

Let him take a strong limber fillet or soft garter, half worn, about one yard and an half in length, and moderately broad and thick: if thick, an eye may be made at one end of it, by doubling about two inches and sewing it, strongly, and the other end passed through this doubling in order to make the noose, which being mounted upon the thumb and singers of his hand must be introduced and gently slipped over the toes and seet of the child so as to embrace the ankles, and thus applied it must be drawn tight with his other hand.

If the foot or feet should be so slippery that his singers cannot hold them and work over the noose at the same time, it must be withdrawn and mounted round his hand or wrist; with which hand when introduced he may take firm hold on both feet, if they are as far down as the vagina; then with the singers of his other hand he can slide the noose along the hand and singers that hold the feet, and fix it round the ankle. But if one foot remains

remains within the uterus, the fingers of his other hand cannot push up the noose far enough to slide it over the ankle; so that he must have recourse to a director like that for polypuses, mounted with the noose, which will push it along the hand and singers that hold the foot. The noose being thus slipped over the singers upon the ankle, he must pull the extremity of the fillet, which hath passed the eye at the upper end of the director; and after it is close drawn, bring down the instrument.

Some use a small slender pair of forceps to grasp the ankles and slide the noose along them; others make use of a fillet with a noose upon one end of it, fixed on a hollow tube that carries it up to be slipt over the ankles; and this being done, it is drawn close by pulling the other end of the fillet down through the cavity of the tube: but there is seldom occasion for any of these instruments, because we can for the most part bring the feet down into the vagina.

If the fillet or garter is too narrow or thin, let it be doubled in the middle, and the noofe made by paffing the two ends through the doubling.

NUMB. II.

When the belly presents, and the head, shoulders, breech, thighs, and legs, are turned up over the back to the fundus uteri; when the back presents, and all these parts are upwards; when the side presents with the head, shoulders, breech, thighs, and legs turned to the side, back,

back, or fore part of the uterus: in all these cases, when the child is pressed into a round or (more properly) an oval figure, it may be for the most part moved round, with one hand introduced into the uterus, the head and shoulders pushed to the fundus, and the legs and breech to the os internum; which being effected, the legs are easily brought down. (See Tab. XXXII. XXXIII.) But these cases are more or less difficult as the seet are farther up or lower down, because the business is to

bring them downwards.

When the breaft, shoulders, neck, ear, or face presents to the os internum, the breech, thighs, and legs being towards the fundus, with the fore-parts of the fœtus turned either to the fide, back, or fore part of the woman's belly, and the whole lying in a longish form, the uterus being closely contracted around its body like a sheath (See Tab. XXXIV.); let the accoucheur introduce his hand into the vagina, and open the os internum, by pushing up the fingers and hand flattened between the parts that prefent and the infide of the membranes: and rest his hand in that situation, until he can distinguish how the child lies, and form a right judgment how to turn and deliver: for if these circumstances are not maturely confidered, he will begin to work in a confuled manner, fatigue himself and the patient, and find great difficulty in turning and extracting the child.

If the feet and legs of the fœtus lie towards the back, fides, or fundus uteri, the woman ought ought to be laid on her back, with her breech raifed and brought a little over the bed, as formerly observed; because in that position he can more easily reach the feet than in any other.

If they lie towards the fore-part of the uterus, especially when the belly is pendulous, the ought to lie upon her fide; because in the other posture it is often difficult to turn the hand up to the fore-part of the womb: whereas, if she is laid on the left side, the righthand may be introduced at the upper part and left fide of the brim of the pelvis, where it is wideft, and then along the fore-part of the uterus; by which means the feet are more eafily come at. If it is more convenient for the accoucheur to use his left-hand, the patient may be turned on her right fide. The only inconvenience attending these positions, is, that the woman cannot be kept so firm and steady, but will be apt to toss about and shrink. from the operator; and, besides, there may be a necessity for turning her upon her back, after the body is delivered, before he can extract the head, especially if it be large, or the the pelvis narrow.

The situation of the child being known, and the position of the mother adjusted, let the proper hand be introduced, and the first effort always made in pushing the presenting part up towards the fundus, either along the sides, back, or fore part of the uterus, as is most convenient. If this endeavour succeeds, and the breech, thighs, or legs come down,

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the body may be delivered with eafe: but if the head, shoulder, breast, or neck, present, the other parts of the body being stretched up lengthwife, and the uterus fo strongly contracted around the child that the presenting part cannot be raifed up, or, though pushed upwards, immediately returns before the legs can be properly feized or brought down; the operator ought, in that case, to force up his hand flowly and gradually between the uterus and the child. If the refistance is great, let him rest a little between whiles, in order to fave the strength of his hand and arm, as formerly directed; and then proceed with his efforts until he shall advance his hand as far as the feet: for the higher his hand is pushed, the more will the uterus be stretched, and the more room granted for bringing the legs along; and if, in pushing up his hand, the fingers should be entangled in the navel-string or one of the arms, let him bring it a little lower, and pass it up again on the outside of such encumbrance.

The hand being advanced as high as the fundus, let him, after some pause, seel for the breech, and slide his singers along the thighs in search of the legs and seet; of which taking hold with his whole hand, if possible, let him bring them down either in a straight line or with an half turn: or should the contraction of the uterus be so strong that he cannot take hold of them in that manner, let him seize one or both ankles between his singers, and pull them along; but if he cannot bring them down

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down to the lower part of the uterus, so as to apply the noose, he must try again to push up the body, in order still more to stretch the uterus, and obtain a freer scope to bring them down lower: then he may apply the noose, and turn the child as above directed, until the head and shoulders are raised up to the fundus, and the feet and breech delivered.

If one leg can be brought down, the child being turned, and that member extracted through the os externum, let the accoucheur flide his hand up to fetch the other; but if this cannot be done, he must fix a finger on the outside of the groin of that thigh which is folded up along the belly, and bring along that buttock, as in the breech case, while he pulls with his other hand at the other leg; and, the body being thus advanced, deliver as before directed.

When the shoulder presents, and the arm lies double in the vagina, let him push them both up: but, if this cannot be done, and the hand is prevented from passing along, he must bring down the arm, and hold it with one hand, while the other is introduced; then let go and push up the shoulder, and as the child is turned, and the feet brought down, the arm will for the most part return into the uterus; but, if the arm that is come down be so much swelled, that it is impracticable to introduce the hand so as to turn and deliver the child, he must separate it at the joint of the shoulder, if it be so low down; or at the elbow, if he cannot reach the shoulder. If

the limb be much mortified, it may be twisted off; otherwise it may be snipt and separated with the scissars.

If the shoulder, by the imprudence and ig. norance of the unskilful, who pull in expectation of delivering in that way, is forced into the vagina, and part of it appears on the outfide of the os externum, a vast force is required to return it into the uterus; because in this case, the shoulder, part of the ribs, breast, and fide, are already pulled out of the uterus, which must be extended so as not only to recrive them again, but also the hand and arm of the accoucheur. If this distention cannot possibly be effected, he must fix a crotchet above the sternum, and turn the child by pushing up the shoulder and pulling down with the crotchet; or flide his fingers to the neck of the child, and with the sciffars divide the head from the body; then deliver first the separated head, or bring along the body by pulling at the arm, or, if need be, with the affistance of the crotchet: after the body is delivered, the head must be extracted according to the rules that will be laid down in fect. 5.

When the forehead, face, or ear presents, and cannot be altered with the hand into the natural position; or is not advanced to the os externum, so that we can assist with the forceps; the head must be returned, and the child delivered by the seet: but if this cannot be done, and the woman is in imminent danger, recourse must be had to the crotchet.

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NUMB. IV.

If the navel-string comes down by the child's head, and the pulsation is felt in the arteries, there is a necessity for turning without loss of time; for, unless the head advances fast and the delivery is quick, the circulation in the vessels will be entirely obstructed, and the child consequently perish. If the head is low in the pelvis, the forceps may be successfully used.

No doubt, if the pelvis is very narrow, or the head too large, it would be wrong to turn: in that case, we ought to try if we can posfibly raise the head, so as to reduce the funis above it, and after that let the labour go on. But if the waters are all gone, and a large portion of the funis falls down, it is impossible to raise it, so as to keep it up, even although we could easily raise the head: because as one part of the funis is pulhed up with the fingers, another part falls down, and evades the reduction; and to raise it up to the side, and not above the head, will be to no purpose: when a little jets down at the fide of the head, our endeavours will for the most part be successful.

NUMB. V.

THE ancients, as well as some of the moderns, advise, in all cases when the upper parts, such as the shoulders, breast, neck, sace, or ear of the child, present, to push them upwards, and bring in the head as in the natural

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way; observing, that the feetus ought never to be delivered by the feet, except in the presen. tation of the lower parts, fuch as the small of the back, belly, fide, breech, or legs. Were it practicable at all times to bring the head into the right position, a great deal of fatigue would be faved to the operator, much pain to the woman, and imminent danger to the child: he therefore ought to attempt this method, and may fucceed when he is called before the membranes are broken, and feels, by the touch, that the face, ear, or any of the upper parts, presents. In that case, let him open the os externum flowly during every pain; and when the os interhum is fufficiently dilated by the descent of the waters and membranes, let him introduce his hand into the uterus, as directed in fect. 3. betwixt the womb and the membranes, which must be broke: and if he finds the head so large, or the pelvis so narrow, that it will be difficult to fave the child, provided the woman is vigorous and has strong pains, he may with little difficulty bring in the crown of the head, then withdraw his hand; and, if the pains return and continue, the child has a good chance to be delivered alive. See chap. ii. fect 3. n° 3.) Even after the membranes are broke, if the presenting part hath fo locked up the os internum as to detain some portion of the waters, (a circumstance eafily known in pushing up the part that presents), he may easily run up his hand fpeedily to keep them from being discharged, and act in the same manner: but if child is

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not large, nor the pelvis narrow, it were pity. while his hand is in the uterus, to defift from turning the child and bringing it by the feet; because in that case, we may be pretty certain of faving it. Besides, after the head is brought into the right position, should the pains go off entirely (and this frequently happens), or a flooding comes on, in confequence of the force which hath been exerted, he will find great difficulty in turning after the waters have been discharged; for it is harder to turn when the vertex prefents, than in any other position; whereas, in the case of a large head or narrow pelvis, when the head is forced down by the labour-pains, and will not farther advance, the child may be faved by the forceps; nay, though the pains do not act fo as to force it down to be delivered either by the forceps or in the natural way, the head may be opened and extracted with the crotchet, which is the last resource.

But this necessity seldom occurs, because the cases in which we are most commonly called are after the membranes have been long broken, the waters discharged, and the uterus strongly contracted around the body of the child, which it confines, as it were, in a mould: so that I have frequently tried in vain to bring the head into the natural position; for this cannot be effected without first pushing up the part that presents, for which purpose great force is required: and as one hand only can be introduced, when the operator endeavours to bring in the head, the pushing

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pushing force is abated, to allow the pulling force to act; and the parts that hindered the head from presenting are again forced down: besides, the head is so large and slippery, that he can obtain no firm hold. He might, indeed, by introducing a finger into the mouth. lay hold of the under jaw, and bring in the face, provided the shoulder presents; but instead of amending, this would make the case worfe, unless the child be very fmall: yet, granting the head could be brought into the natural polition, the force necessarily exerted for this purpole would produce a flooding, which commonly weakens the patient and carries off the pains; and after all, he must turn with less advantage; and if that cannot be performed when the head is brought in, he must have recourse to the last and most difagreeable method; whereas, when any other part presents, we can always turn the child, and deliver it by the feet. This we cannot promise after the head is brought in; and once the operator's hand is in the uterus, he ought not to run fuch risks.

When I first began to practise, I frequently endeavoured to adjust the position of the head in this manner; but meeting with those insuperable difficulties I have mentioned, I adhered to that method which I have always found certain and safe. I have likewise used the impellens of Albucasis, in order to keep up the shoulders or body until I could bring in the head: but the contraction was always so great, that the instrument slipt, and was in

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danger of hurting the uterus. Indeed, when the ear, forehead, or the fontanel, presented, I have, by pushing up, found the head come into the right position: I have likewise, when the forehead was towards the groin or side of the pelvis, moved it more backwards, by which means the forceps were fixed with more ease; but I have much oftener failed, by the head's returning to its former situation.

The child is often in danger, and fometimes loft, when the breech presents and is low down in the pelvis, provided the thighs are fo strongly pressed against the funis and belly as to stop the circulation in the rope; as also when the child is detained by the head after the body is delivered: in both cases the danger must be obviated by an expeditious delivery; and if the body is entangled in the navel-string, it must be disengaged as well as possible, especially when the funis happens to be between the thighs. As I have before observed, many of these minute directions, in laborious and preternatural cases, may be thought idle and trifling by those practitioners who, without minding any stated rules, introduce the forceps, and taking hold on the head at random deliver with force and violence; and who, in preternatural deliveries, thrust up their hands into the uterus, and, without confidering the position, search for the feet, pull them down and deliver in a hurry. Such practice may sometimes succeed; but will often destroy the child, and bruise

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and injure the parts of the mother, even to the hazard of her life. See Collect. XXXIV.

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NUMB. I.

The legs and breech of the child being brought down, and the body properly turned with the fore-parts to the mother's back, let the accoucheur endeavour to bring it along: but if it is detained by the fize of the belly, diftended with air or water, (a cafe that frequently happens when the child has been dead for feveral days), let the belly be opened, by forcing into it the points of his scissars; or he may tear it open with the sharp crotchet.

The body of the child being delivered, the arms brought down, and every method hitherto directed unfuccessfully used for the extraction of the head, which is detained by being naturally too large, over-offified, or dropfical, or from narrowness and distortion of the pelvis; if the belly was not opened, and the child is found to be alive by the motion of the heart, or pullation of the arteries in the funis, the forceps ought to be tried, (fee Tab. XXXV.): but if he finds it impracticable to deliver the head so as to fave the life of the child, he must, according to some, force the points of the sciffars through the lower part of the occipital bone, or through the foramen magnum; then dilate the blades fo as to enlarge the opening, and introduce a blunt or sharp hook.

hook. This operation rarely succeeds when the head is over-offised: but may answer the purpose when the bones are soft and yielding, or in the case of an hydrocephalus; because in the first the aperture may sometimes be enlarged, and in the other the water will be evacuated so as to diminish the bulk of the head, which will of consequence come along with more ease.

Some recommend an instrument to perforate the skull, with double points curved and joined together; which, when pushed into the foramen, are separated, and take hold on the inside; but as the opening with the sciffars and introducing the blunt hook as above, will answer the same end, it is needless to multiply instruments, especially as this method is not

fo certain as the following.

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If, notwithstanding these endeavours, the head cannot be extracted, let the operator introduce his hand along the head, and his fingers through the os uteri; then flide up one of the curved crotchets along the ear, betwixt his hand and the child's head, upon the upper part of which it must be fixed: this being done, let him withdraw his hand, take hold of the instrument with one hand, turning the curve of it over the forehead, and with the other grasp the neck and shoulders, then pull along. The crotchet being thus fixed on the upper part, where the bones are thin and yielding, makes a large opening, through which the contents of the skull are emptied: the head collapfing, is with more certainty ex-Vol. I. Mtracted.

tracted, and the instrument bath a firm hold to the last, at the forehead, os petrofum, and basis of the skull.

In introducing the crotchet, let the operator remember the caution given in chap iii. fect. c. He must not begin to pull until he is certain that the point of the instrument is properly fixed near the vertex; and he must keep the

handle back to the perinæum.

The excellency of Mefnard's contrivance is more confpicuous here than when the head presents: because the curvature of the crotchet allows the point to be fixed on the upper part of the skull, which is to be tore open; and in pulling, the contents are evacuated, and the head is leffened. By these means the principal obstruction is removed; whereas the straight crotchets take so flight a hold, and slip fo often, that feveral times I have been very much fatigued before I could effect the delivery; but have always succeeded to my fatisfaction fince I adopted the other kind. See Collect. XXXV. and Tab. XXXIX.

If one crotchet be found infufficient, let him introduce the other in the same manner along the opposite side, lock and join them together, and pull along, moving and turning the head fo as to humour the shape of the pelvis. This method feldom fails to accomplish his aim, though fometimes very great force is required; in which case he must pull with leifure and caution.

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Bur if all the expedients should fail, by reason of the extraordinary offication or fize of the head, or the narrowness and distortion of the pelvis, after having used the crotchet without fuccess, he must separate the body from the head with a biftory or pair of sciffars: then, pushing up the head into the uterus, turn the face to the fundus, and the vertex down to the os internum and brim of the pelvis: let him direct an affiftant to press upon the woman's belly with both hands, in order to keep the uterus and head firm in that polition; then open the skull with the scissars, destroy the structure of the brain, and extract with the crotchets, as directed in chap. iii. fect. Cashing of the state the mineral ever

The head is sometimes lest in the uterus by those practitioners who, not knowing how to turn the fore parts and face of the child towards the back-part of the uterus, or how to bring it along although it presented in that position, pull at random with all their strength, so that the neck is stretched and separated, and the head lest behind. This may also happen to an expert accoucheur, when the child hath been dead for many days, and the body is much mortified, even though he hath used

all the necessary precautions.

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In fuch a case, provided the head is not very large, nor the pelvis narrow, and the forehead is towards the facrum, let him slide up his hand along the back-part of the M 2 pelvis

pelvis, and, introducing two fingers into the mouth with the thumb below the chin, try to pull the forehead into the hollow of the factum: if it sticks at the jetting-in of that bone, he must endeavour to move it first to one side and then to the other. If the head is small, it will come along; if any fragment of the neck remains, or any part of the loose skin, he may lay hold on it, and affist delivery by pulling at it with his other hand; if the head is low down, it may be extracted with the forceps.

Should all these methods fail, let him push up his hand along the fide of the head, until it shall have passed the os internum; with the other hand let him introduce one of the curved crotchets, and fix it upon the upper part of the head; then withdrawing the hand which was introduced, take hold on the instrument, and fliding the fingers of the other hand into the mouth, he must pull down with both as above directed. If the head is not over-offified, the crotchet will tear open the skull; and the bulk being of consequence diminished, the whole may be brought along, even in a narrow pelvis: but if it cannot be moved even by this expedient, he must introduce the other crotchet along the other fide of the head, and fixing it upon the skull, lock them together; then, in pulling, turn the forehead down into the hollow of the facrum, and extract with an half-round turn upwards, as when delivering with the forceps.

If the forehead is towards the os pubis, and cannot be brought into the right polition, let him

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him, with his hand push up the head into the uterus, turn the forehead from the anterior to the side or back-part of it, and try to extract as before. If the child hath been dead some time, and is much mortified, he must pull cautiously at the under jaw, because, should that give way, he will have no other hold for pulling or keeping the head steady, when he attempts to extract with one crotchet.

When the head is so large, or the pelvis so narrow, that none of these methods will succeed, let him push up, and, turning the upper parts downwards, direct an affishant to press the patient's belly with both hands, moving them from side to side, and squeezing in such a direction, as will force the head towards the os internum, and retain it firmly in that position; then it must be opened and extracted, according to the directions given in

chap. iii. fect. 7. numb. 2.

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Although by these methods I have succeeded in a sew cases of this kind which have happened in my practice; yet, as great difficulties may occur from inflammations of the pudenda, contraction of the uterus, slipperiness or largeness of the head, and the narrowness of the pelvis, it will not be improper to inform the reader of other methods that appear to me useful, particularly when the parts are much contracted and swelled. Let the hand be introduced into the vagina; and if it cannot be admitted within the uterus, the singers being infinuated, may move the head so as to raise the face and chin to the fundus,

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the vertex being turned to the os internum, and the forehead towards the fide of the facrum. This being effected, let the operator flide up along one ear a blade of the long forceps, which are curved to the fide, (fee Tab. XVII. XXXV.); then change hands, and fend up the other blade along the opposite ear: when they are locked and the handles fecured by a fillet, he must pull the head as low as it will come; then putting them into the hands of an affistant, who will keep them in that position, let him make a large opening with the seissars, squeeze the head with great force,

and extract flowly and by degrees.

There is an old instrument with two fides which turn on a pivot, formerly recommended in this case, and fince improved, with the addition of another fide, by Mr Leveret, who gives it the denomination of tire-tête: but as I thought the contrivance was too complex, and the blades too much confined to a circular motion. I have altered the form of it in a manner that renders it more fimple, convenient, and less expensive. Having turned down the vertex as above directed, let this inftrument, with the three fides joined together, be introduced along the accoucheur's hand to the upper part of the head; then let the fides or blades be opened with the other hand, fo as to inclose the head, moving them circularly and lengthwife in a light and eafy manner, that they may pals over the inequalities of the scalp, and avoid the resistance of the head and uterus: when they are exactly placed at equal distances

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distances from one another, let him join the handles, withdraw his hand, and, tying them together with a fillet, pull down, open, and extract, as above directed; and let it be remembered, that the farther the hand can be introduced into the uterus, the more easily

will both instruments be managed.

When the pelvis is large, or the head small, (in which cases this misfortune selftom happens), without doubt we might succeed with Mauriceau's broad fillet or sling, provided it could be properly applied: but, upon trial, I found my hand so much cramped by the contraction of the uterus, and was so much incommoded by the slipperiness of the head, upon which I could not fix it so as to have sufficient hold, that after many fruitless efforts I was obliged to have recourse to the scissars and crotchets as above.

Amand's net is attended with the same difficulties; and rather more troublesome, as it is more compounded: for, when it is mounted on the operator's hand, it will be found scarce practicable to bring over the head the narrow fillet by which it is pulled along, because it commonly slides off from one side or the

other.

If the placenta adheres to the uterus, let him first extract the head; if the cake is separated and in his way, let him deliver it before he begins to deliver the head.

When the head is fmall, or the pelvis large, dilating the foramen magnum with the sciffars, and introducing the blunt hook, may be of

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use either to pull the head along or keep it down, until we can fix the forceps, curvecrotchet, or Leveret's tire-tête. See Collect. XXXVI. or open charled hap be AvxXX

CHAP. V.

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Of Twins! cours, well out doubt we daiped succeed with

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WINS are supposed to be the effect of A a double conception in one coition, when two or more ova are impregnated with as many animalcula; which descending from the ovarium, through the Fallopian tube, into the fundus uteri, as they increase, come in contact with that part, and with one another, and are fo preffed as to form one globular figure, and stretch the womb into the same form which it assumes when distended by one ovum only; and that, during the whole term of uterine gestation, it is impossible to distinguish twins, either by the figure and magnitude of the uterus, or by the motion of the different fœtuses; for one child, when it is large and furrounded with a great quantity of waters, will fometimes produce as large 2 prominence (or even larger) in the woman's belly, than is commonly observed when she is big with twins. One child will also, by moving its legs, arms, and other parts of its body against different parts of the uterus, at the

the fame instant or by intervals, yield the fame fensation to the mother as may be obferved in two or more children; for part of the motion in twins is employed on each other, as

well as upon the uterus.

There is therefore no certain method of diftinguishing in these cases, until the first child is delivered, and the accoucheur has examined if the placenta is coming along. If this comes of itself, and after its extraction the mouth of the womb be felt contracted, and the operator is unwilling to give unnecessary pain by introducing his band into the uterus; let him lay his hand upon the woman's abdomen, and if nothing is left in the womb, he will generally feel it, just above the os pubis, contracted into a firm round ball of the fize of a child's head, or less: whereas, if there is another child left, the fize will be found much larger. If the placenta does not come down before the fecond child, which is frequently the case; upon examining, he will commonly feel the membranes with the waters pushed down: through the os uteri; or, if they are broken, the head or some part of the body will be felt. If, therefore, the woman has strong pains, and is in no danger from floodings or weakness, provided the head prefents fair, and feems to come along, the will be delivered of this also in the natural way.

If the membranes are not broken, if the head does not immediately follow, or if the child presents wrong, he ought to turn and bring it immediately by the feet, in order to fave the pa-73/11

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ficht the fatigue of a fecond labour, that may prove tedious and even dangerous by enfecting her too much. Befides, as the parts are fully opened by the first delivery, he can introduce his hand with ease; and as the membranes are for the most part whole, the waters may be kept up, and the foctus easily turned, as in chap. W. sect. 2.; but if the pelvis is narrow, the woman strong, and the head presents, he ought to leave it to the efforts of nature.

If the first child presents wrong, and in turning that he feels another, he must beware of breaking the membranes of one while he is at work upon the other: but should they chance to be broke, and the legs of both entangled together, (though this is feldom the ease, because they are commonly divided by two sets of membranes), let the operator, when he has got hold on two legs, run up his singers to the breech, and feel if they belong to the same body; and one child being delivered, let the other be turned and brought out in the same manner. If there are more than two, the same method must take place, in extracting one after another.

In case of twins, the placenta of the first seldom comes along until the second child is delivered: but as this does not always happen, he ought, as formerly directed, to certify himself that there is nothing left in the uterus, when the cake comes of itself. Both children being delivered, let him extract both placentas, if they come not of themselves; and if

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they form distinct cakes, separate first one, then the other; but if they are joined together, forming but one mass, they may be delivered

at once, as in chap. ii. fect. 7.

When there are three or four children, (a case that rarely happens), the placentas are sometimes distinct, and sometimes altogether form but one round cake; but when this is macerated in water for some days, they, with their several membranes, may be easily separated from one another; for they only adhere in consequence of their long pressure in the uterus, and seldom have any communication of vessels; although such a communication hath lately sallen under my observation. See Book I. chap, iii. sect. 5.

Twins for the most part lie diagonally in the uterus, one below the other; so that they seldom obstruct one another at the os internum.

See Collect. XXXVII. and Tab. X.

SECT. II. Of Monsters, And add

TWO children joined together by their bellies (which is the most common case of monstrous births) or by the sides, or when the belly of the one adheres to the back of the other, having commonly but one funis, are comprehended in this class, and supposed to be the effect of two animalcula impregnating the same ovum, in which they grow together, and are nourished by one navel-string, originally belonging to the secundines; because the vessels pertaining to the coats of the veins M 6

and arteries do not anastomose with the ves-

fels belonging to the fœtus.

In such a case, where the children were finall, the adhesion hath been known to stretch in pulling at the feet of one, so as to be delivered; and the other hath been afterwards brought along in the same manner, without

the necessity of a separation.

When the accoucheur is called to a case of this kind, if the children are large, and the woman come to her full time, let him first attempt to deliver them by that method: but if, after the legs and part of the body of the first are brought down, the rest will not follow, let him slide up his hand, and with his fingers examine the adhesion; then introducing the sciffars between his hand and the body of the fcetus, endeavour to separate them by snipping through the juncture. Should this attempt fail, he must diminish the bulk in the best manner he can think of, and bring the body of the first, in different pieces, by pulling or cutting them afunder, as he extracts with the help of the crotchet.

No certain rules can be laid down in these cases, which seldom happen; and therefore a great deal must be lest to the judgment and segacity of the operator, who must regulate his conduct according to the circumstances of the case, and according to the directions given for delivering when the pelvis is narrow and the children extraordinary large.

Formerly, practitioners used straight and crooked knives with long handles, which were

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introduced into the uterus along the hand, in order to cut and divide the bodies of children, that they might be extracted piecemeal: and this cruel practice obtained even in some cases which we can now manage with eafe and fafety by turning and delivering the fœtus by the feet. But, no doubt, some will happen in which it is impossible to preserve or deliver the children without the help of instruments; and in fuch an emergency the sciffars are much fafer than knives, with which the operator runs the risk of cutting the uterus or himself; whereas he is exposed to no such hazard from the other, which cut only betwixt the points. See Collect. XXXVIII. ti comitta seda que con carres con contra de la contra del la

SECT. III. Of the CESARIAN OPERATION.

ting contract in the condition of the more con-WHEN a woman cannot be delivered by any of the methods hitherto described and recommended in laborious and preternatural labours, on account of the narrowness or distortion of the pelvis, into which it is fometimes impossible to introduce the hand: or from large excrescences and glandular swellings, that fill up the vagina, and cannot be removed; or from large cicatrices and adhefions in that part and at the os uteri, which cannot be separated; in such emergences, if the woman is strong and of a good habit of body, the Cæfarian operation is certainly adviseable, and ought to be performed; because the mother and child have no other chance to to be faved, and it is better to have recourse

to an operation which hath sometimes succeeded, than leave them both to inevitable death. Nevertheless, if the woman is weak, exhausted with fruitless labour, violent floodings, or any other evacuation which renders her recovery doubtful, even if she were delivered in the natural way; in these circumstances it would be raffiness and presumption to attempt an operation of this kind, which ought to be delayed until the woman expires, and then immediately performed with a view to save the child.

The operation hath been performed both in this and the last century, and sometimes with fuch fuccess, that the mother has recovered. and the child furvived. The previous steps to be taken are, to strengthen the patient, if weak, with nourishing broths and cordials; to evacuate the indurated fæces with repeated glysters; and if the bladder is distended with urine, to draw it off with a catheter. These precautions being taken, the must be laid on her back, on a couch or bed, her fide on which the incision is to be made being raised up by pillows placed below the opposite side: the operation may be performed on either fide; though the left is commonly preferred to the right, because in this last the liver extends lower. The apparatus confifts of a biftory, probe-feiffars, large needles threeded, sponges, warm water, pledgets, a large tent or doffil, compresses, and a bandage for the belly.

kept warm, and no part of the belly uncovered except that on which the incision is to be

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made: if the operator be a young practitioner, the place may be marked by drawing a line along the middle space between the navel and the os ilium, about six or seven inches in length, slanting forwards towards the lest groin, and

beginning as high as the navel.

According to this direction, let him hold the skin of the abdomen tense between the singer and thumb of one hand, and with the bistory in the other make a longitudinal incision through the cutis to the membrana adiposa, which, with the muscles, must be slowly dissected and separated, until he reaches the peritonæum, which must be divided very cautiously, for sear of wounding the intestines that frequently start up at the sides, especially if the membranes are broken, the waters discharged, and the uterus contracted.

The peritonaum being laid bare, it may be either pinched up by the fingers, or flowly diffected with the biftory, until an opening is made fufficient to admit the fore-finger, which must be introduced as a director for the biftory or sciffars in making an effectual dilatation. If the intestines push out, let them be pressed downwards fo as that the uterus may come in contact with the opening. If the womb is still distended with the waters, and at some distance from the child, the operator may make uponit a longitudinal incision at once; but if it is contracted close round the body of the fœtus, he must pinch it up, and dilate in the same cautious manner practifed upon the peritonæum, taking care to avoid wounding the

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Fallopian tubes, ligaments, and bladder: then introducing his hand he may take out the child and fecundines. If the woman is strong, the uterus immediately contracts, so as that the opening, which at first extended to about fix or seven inches, is reduced to two, or less; and in consequence of this contraction, the vessels being shrunk up, a great essuion

of blood is prevented.

The coagulated blood being removed, and what is still fluid sponged up, the incision in the abdomen must be stitched with the interrupted suture, and sufficient room lest between the last stitch and the lower end of the opening, for the discharge of the moisture and extravasated sluid. The wound may be dressed with dry pledgits or dossils dipped in some liquid balsam, covered with compresses moistened with wine, and a bandage to keep on the dressings and sustain the belly. Some authors observe, that the cutis and muscles only should be taken up in the suture, less bad symptoms should arise from stitching the peritonæum.

The woman must be kept in bed, as quiet as possible, and every thing administered to promote the lochia, perspiration, and sleep; which will prevent a sever and other dangerous symptoms. If she hath lost a great quantity of blood from the wounds in the uterus and abdomen so as to be in danger from inanition, broths, caudles, and wine, ought to be given in small quantities, and frequently repeated; and the Cart. Peruvian. administered

in powder, decoction, or extract, may be of great service in this case. For farther information on this subject, the reader may confult Russetus, the Memoirs of the academy of surgeons at Paris, and Heister's Surgery. See Collect. XXXIX.

BOOK IV.

CHAP. I.

Of the MANAGEMENT of Women from the Time of their Delivery to the End of the Month, with the several Diseases to which they are subject during that Period.

SECT. I. Of the EXTERNAL APPLICATION.

THE woman being delivered of the child and placenta, let a foft linen cloth, warmed, be applied to the external parts; and if the complains much of a smarting soreness, some pomatum may be spread upon it. The linen that was laid below her, to spunge up the discharges, must be removed, and replaced with others that are clean, dry, and warm. Let her lie on her back, with her legs extended close to each other; or upon her side, if the thinks she can lie easier in that position, until she recovers from the fatigue: if she is spent and exhausted, let her take a little warm wine

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wine or caudle, or, according to the common custom, some nutmeg and sugar grated togegether in a spoon: the principal design of administering this powder, which among the good women is seldom neglected, is to supply the want of some cordial draught, when the patient is too weak to be raised, or supposed to be in danger of retchings from her stomach's being overloaded. When she hath in some measure recovered her strength and spirits, let the cloths be removed from the parts, and others aplied in their room; and if there is a large discharge from the uterus; let the wet linen below her be also shifted, that she may

not run the risk of catching cold.

When the patient is either weak or faintifh, fhe ought not to be taken out of bed, or even raifed up to have her head and body shifted, until fhe is a little recruited; otherwise she will be in danger of repeated faintings, attended with convulsions, which fometimes end in death. To prevent these bad consequences, her skirt and petticoats ought to be loofened and pulled down over the legs, and replaced by another, well warmed, with a broad head-band to be flipt in below, and brought up over her thighs and hips: a warm double cloth must be laid on the belly, which is to be furrounded by the head-band of the skirt pinned moderately tight over the cloth, in order to compress the viscera and the relaxed parietes of the abdomen, more or less, as the women can easily bear it; by which means the uterus is kept firm in the lower part of the abdomen and prevented from rolling

rolling from fide to fide when the patient is turned: but the principal end of this compresfion is to hinder too great a quantity of blood from rushing into the relaxed vessels of the abdominal contents; especially when the uterus is emptied all of a fudden by a quick delivery. The preffure being thus fuddenly removed, the head is all at once robbed of its proportion of blood, and the immediate revultion precipitates the patient into dangerous lypothemia.

For this reason the belly ought to be firmly compressed by the hands of an assistant, until the bandage is applied; or, in lieu of it, a long towel, fheet, or roller, to make a fuitable compression: but for this purpose different methods are used in different countries, or according to the different circumstances of the patients. The head-cloaths and shift ought also to be changed, because, with sweating in time of labour, they are rendered wet and difagreeable. Several other applications are necessary when the external or internal parts are rent or inflamed, misfortunes that sometimes happen in laborious and preternatural

The directions for ordering the bed in time of labour, and of the applications after delivery, are absolutely necessary to be known by young practitioners; because all these precautions are for the ease and safety of the patient when attended by unexperienced nurses.

NUMB.

INFLAMMATIONS of the labia pudendi, rectum,

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rectum, urethra, vagina, and uterus, chiefly happen when the head, shoulder, breech, or any other part of the sœtus, hath been forced into the pelvis, and long detained in that situation; so that, by many strong pains, the delivery was effected, or great force and violence were required to turn or extract the child. These inflammations, if slight, are commonly relieved, or altogether resolved, by a plentiful discharge of the lochia, rest, and profuse sweating; but if violent, blooding, warm somentations, cataplasms, and emollient glysters, may be necessary; though the first and last must be used with caution.

If the pressure hath been so great as totally to obstruct the circulating fluids in those parts, a mortification enfues; either total, by which the woman is foon destroyed; or partial, when the mortified parts separate and cast off in thick floughs, then digeft, and are healed as a common fore, provided the patient be of a good habit of body: but if the opposite parts are also affected in the same manner, and both fides preffed together; as for example, in the uterus, os internum, vagina, or os externum; or if the internal membrane of the whole inner furface floughs off, then there is danger of a coalescence or growing together, by which are formed callofities; and these if they happen in the os internum, vagina, or os externum, will produce difficult and dangerous labours in the next parturition; and if in the uterus, will altogether prevent conception; though this rarely happens, because of the

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continual draining of the moisture that is discharged from the womb. In order to avoid this mischance, emollient injections ought frequently to be thrown up into the uterus, and large tents or dossils dipt in vulnerary balsams applied in the vagina and os externum.

NUMB. II.

IF, in consequence of the long pressure of the child's head at that part of the vagina where its outward furface is attached to the back and under part of the bladder, the mortification affects the coats of the vesica urinaria, as well as those of the vagina, when the floughs fall off, the urine will pass that way, and hinder the opening (if large) from being closed; this is an inexpressible inconvenience and misfortune to the poor woman, both from the fmell and continual wetting her cloaths. The vagina and bladder may also be lacerated by the forceps, crotchet, or any other instrument imprudently forced up: but, in that case, the urine is immediately discharged through the wound; whereas, in a mortification, it comes off in a natural way, until the flough begins to separate and fall off.

As foon as this misfortune is known, the cure ought to be attempted; this (according to fome) confifts in keeping a flexible catheter always in the bladder, that the urine may be continually folicited to come through the ure-thra rather than through the vagina: but if this precaution hath been neglected, and the lips of the ulcer are turned callous, we are directed

Chap. I.

directed to pare them off with a curved knife, buttoned at the point, or confume them with lunar caustic; and, if the opening is large, to close it with a double stitch, keeping the flexible catheter in the bladder until it is entirely filled up: but I wish this operation may not be found impracticable.

NUMB. III.

THE os externum is frequently tore, particularly at the perinaum; and fometimes the laceration reaches to the anus. At other times, (but more feldom), both vagina and rectum are tore for the fpace of two or three inches upwards, and the two form but one cavity at the lower part. This laceration is frequently occasioned from the excessive largeness of the child's head; from the rigidity of the fibres in women who are near theborders of forty when their first children are born; from the accoucheur's neglecting to flide the perinæum over the head when it is forcibly propelled by the pains, or from his omitting to keep up the head with the flat of his hand that it may not come too fuddenly along; from too great violence used in laborious or preternatural labours; and from the operator's incautious manner of thrusting in his hand. If the laceration be small, the part foon heals up, and the only inconvenience attending the wound is a smarting after making water; and when the laceration is large, extending to the edge of the sphincter ani, or even farther, this pain is still more troublefome, and increased upon the least motion, by the friction fri dil wr that call on

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friction of the lips against each other. This disagreeable rubbing, is (according to some writers) prevented by making two deep stitches that will keep the lips together: but in this case, we can seldom cure by the first intention, on account of the moisture that is continually passing that way, namely, the lochia and urine, that insimuate themselves into the wound. Besides, the lips are tore and ragged, and the hold we have is but slender.

In the third case, it is supposed that there is an absolute necessity to make, as soon as possible, two, three, or sometimes four, deep flitches through the tore vagina and rectum, the knots being tied in the vagina, and two more stitches in the perinaum, to affist the re-union of the parts; for if the sphincter ani is entirely separated, and continues in that condition, the patient can feldom retain her excrements for any length of time. If this misfortune should remain unknown, or the operation unperformed, on account of the woman's weakness, until the lips of the wound are grown callous, these callous edges must be pared off with sciffars; or, if that should be found impracticable, scarified with the point of a lancet or biftory, and then flirched as above directed; and the stitches must be made very deep, otherwise they will not hold; because there is but little muscular flesh in the vagina and rectum: but the colon ought first to be emptied with glysters, and the patient take little or no folid food, that the stitches may not be overstrained when she goes to ftool.

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stool. When the laceration reaches so high as to endanger the woman's retentive faculty, this method, doubtless, ought to be tried; but not otherwise, because the operation very rarely succeeds.

When the os internum is tore from the fame causes, all that can be done is to keep the patient strictly to the regimen we have directed for women after delivery, and take care that she shall move as little as possible

during the first three weeks.

The rents or lacerations that happen to the uterus are of more dangerous consequence, and indeed commonly accounted mortal; therefore they demand the utmost care and circumspection, in all the different cases. If the patient is plethoric, she ought to be blooded, in order to prevent a sever, unless she hath undergone a considerable discharge from the uterus; she ought to be kept very quiet and motionless; to take nothing but spoon-meat, and even of that a little at a time; and drink diluting liquors, such as barley-water and very weak broths.

SECT. II. Of Air, Diet, Sleeping and Watching, Motion and Rest, Retention and Excretion, and the Passions of the Mind.

A LTHOUGH we cannot remove the patient immediately after delivery into another climate, we can qualify the air, so as to keep it in a moderate and falutary temper, by rendering it warm or cold, moist or dry, according

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ding to the circumstances of the occasion. With regard to diet, women in time of labour, and even till the ninth day after delivery, ought to eat little folid food, and none at all during the first five or feven: let them drink plentifully of warm diluting fluids, fuch as barley-water, gruel, chicken-water, and teas; caudles are also commonly used, composed of water-gruel boiled up with mace and cinnamon, to which, when strained, is added a third or fourth part of white-wine or less, if the patient drinks plentifully, sweetened with sugar to their tafte: this composition is termed white caudle; whereas, if ale is used instead of wine, it goes under the name of brown caudle. In some countries, eggs are added to both kinds; but in that case, the woman is not permitted to eat meat or broths till after the fifth or feventh day: in this country, however, as eggs are no part of the ingredients, the patient is indulged with weak broth fooner, and fometimes allowed to eat a little boiled chicken. But all these different preparations are to be prescribed weaker or stronger, with regard to the spices, wine, or ale, according to the different constitutions and situations of different patients: for example, if the is low and weak, in confequence of an extraordinary discharge of any kind either before or after delivery, or if the weather is cold, the caudles and broths may be made the ftronger; but if she is of a full habit of body, and has the least tendency to a fever, or if the season is excessively hot, these drinks ought to be of VOL. I.

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a very weak confistence, or the patient restricted to gruel, tea, barley, and chickenwater, and these varied according to the

emergency of the case.

Her food must be light and easy of digestion, fuch as panada, bifcuit, and fago: about the fifth or feventh day, she may eat a little boiled chicken, or the lightest kind of young meat; but these last may be given sooner or later, according to the circumstances of the case and the appetite of the patient. In the regimen as to eating and drinking, we should rather err on the abstemious side, than indulge the woman with meat and strong fermented liquors, even if these last should be most agreeable to her palate; for we find by experience, that they are apt to increase or bring on fevers, and that the most nourishing and salutary diet is that which we have above prescribed. Every thing that is difficult of digestion, or quickens the circulating fluids, must of necessity promote a fever; by which the necessary difcharges are obstructed, and the patient's life endangered.

As to the article of fleeping and watching, the patient must be kept as free from noise as possible, by covering the floors and stairs with carpets and cloths, oiling the hinges of the doors, filencing the bells, tying up the knockers, and, in noisy streets, strowing the pavement with straw: if, notwithstanding these precautions, she is disturbed, her ears must be stuffed with cotton, and opiates administered to procure sleep; because watching makes

makes her restless, prevents prespiration, and promotes a fever .- Motion and rest are another part of the non-naturals to which we ought to pay particular regard. By toffing about, getting out of bed, or fitting up too long, the perspiration is discouraged and interrupted; and in this last attitude the uterus, not yet fully contracted, hangs down, stretching the ligaments, occasioning pain, cold shiverings, and a fever: for the prevention of these bad symptoms, the patient must be kept quiet in bed till after the fourth or fifth day; and then be gently lifted up in the bed-cloaths, in a lying posture, until the bed can be adjusted, into which he must be immediately reconveyed, there to continue, for the most part, till the ninth day; after which period women are not so subject to fevers as immediately after delivery. Some there are who, from the nature of their constitutions or other accidents, recover more flowly; and fuch are to be treated with the same caution after as before the ninth day, as the case seems to indicate. Others get up, walk about, and recover, in a much shorter time; but these may, fome time or other, pay dearly for their fool-hardiness, by encouraging dangerous fevers: fo that we ought rather to err on the fafe fide, than run any risk whatsoever.

What next comes under confideration, is the circumstance of retention and excretion. We have formerly observed, that in time of labour, before the head of the child is locked into the pelvis, if the woman has not had eafy

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passage in her belly that same day, the rectum and colon ought to be emptied by a gly. fter, which will affift the labour, prevent the difagreeable excretion of the fæces before the child's head, and enable the patient to remain two or three days after without the necessity of going to stool. However, should this precaution be neglected, and the patient very costive after delivery, we must beware of throwing up stimulating glysters, or administering strong cathartics, lest they should bring on too many loofe stools, which, if they cannot be ftopt, sometimes produce fatal confequences, by obstructing the perspiration and lochia, and exhausting the woman, so as that the will die all of a fudden; a catastroppe which hath frequently happened from this Wherefore, if it be necessary to empty the intestines, we ought to prescribe nothing but emollient glyfters, or fome very gentle opener, fuch as manna, or Elect. Lenitivum. For the retention of urine that sometimes happens after labour, we have already proposed a remedy in Book II. chap. ii. fect. 3. But no excretion is of more confequence to the patient's recovery than a free perspiration; which is so absolutely necessary, that unless she has a moisture continually on the furface of her body for fome days after the birth, she feldom recovers to advantage: her health, therefore, in a great measure depends upon her enjoying undisturbed repose, and a constant breathing sweat, which prevents a fever, by carrying off the tension, and affit;

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affifts the equal discharge of the lochia; and when these are obstructed, and a fever ensues with pain and reftleffness, nothing relieves the patient so effectually as rest and profuse fweating, procured by opiates and fudorifics at the beginning of the complaints; yet thefe last must be more cautiously prescribed in ex-

ceffive hot, than in cool weather.

The last of the non-naturals to be confidered, are the passions of the mind, which also require particular attention. The patient's imagination must not be disturbed by the news of any extraordinary accident which may have happened to her family or friends; for fuch information hath been known to carry off the labour-pains entirely, after they were begun, and the woman has funk under her dejection of spirits: and, even after delivery. these unseasonable communications have produced fuch an anxiety as obstructed all the necessary excretions, and brought on a violent fever and convulsions, that ended in death. Na GIXII

SECT. III. Of violent FLOODINGS.

LL women, when the placenta separates, and after it is delivered, lofe more or less red blood, from the quantity of half a pound to that of one pound or even two; but should it exceed this proportion, and continue to flow without diminution, the patient is in great danger of her life. This hazardous hæmorrhagy is known by the violence

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of the discharge, wetting fresh cloths as fast as they can be applied; from the pulse becoming low and weak, and the countenance turning pale: then the extremities grow cold; she sinks into faintings; and, if the discharge is not speedily stopped or diminished, is seized with convulsions, which often terminate in death.

This dangerous efflux is occasioned by every thing that hinders the emptied uterus from contracting; such as, great weakness and lassitude, in consequence of repeated floodings before delivery; the sudden evacuation of the uterus; sometimes, though seldom, it proceeds from part of the placenta's being left in the womb: it may happen when there is another child or more still undelivered; when the womb is kept distended with a large quantity of coagulated blood; or when it is inverted by pulling too forcibly at the placenta. See Book II. chap. iii. sect. 2.

In this case, as there is no time to be lost, and internal medicines cannot act so suddenly as to answer the purpose, we must have immediate recourse to external application. If the disorder be owing to weakness, by which the uterus is disabled from contracting itself, so that the mouths of the vessels are left open; or though contracted a little, yet not enough to restrain the hæmorrhagy of the thin blood; or if, in separating the placenta, the accoucheur has scratced or tore the inner surface or membrane of the womb; in these cases, such things must be used as will assist the contractile power

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of the uterus, and hinder the blood from flowing fo fast into it and the neighbouring vessels: for this purpose, cloths dipped in any cold aftringent fluid, fuch as oxycrate, or red tart wine, may be applied to the back and belly. Some prescribe venæsection in the arm, to the amount of five or fix ounces, with a view of making revulsion: if the pulse is strong, this may be proper; otherwife, it will do more harm than good. Others order ligatures, for compressing the returning veins at the hams, arms, and neck, to retain as much blood as possible in the extremities and head. Besides these applications, the vagina may be filled with tow or linen rags dipped in the abovementioned liquids, in which a little alum or faccharum faturni hath been diffolved: nay, some practitioners inject proof-spirits warmed, or, foaking them up in a rag or sponge, introduce and squeeze them into the uterus, in order to constringe the vessels.

If the floodings proceed from another child, the retention of the placenta, or coagulated blood, these ought immediately to be extracted; and if there is an inversion of the uterus, it must be speedily reduced. Should the hæmorrhage, by these methods, abate a little, but still continue to flow, though not in such a quantity as to bring on sudden death, some red wine and jelly ought to be prescribed for the patient, who should take it frequently, and a little at a time; but above all things, chicken or mutton broths, administered in the same manner, for fear of overloading the weakened

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ftomach, and occasioning retchings: these, repeated in small quantities, will gradually sill the exhausted vessels and keep up the circulation. If the pulse continues strong, it will be proper to order repeated draughts of barleywater, acidulated with elixir of vitriol: but if the circulation be weak and languid, extrast of the bark, dissolved in Aq. Cinnamoni tenuis, and given in small draughts, or exhibited in any other form, will be serviceable; at the same time, sulling the patient to rest with opiates. These, indeed, when the first violence of the slooding is abated, if properly and cautiously used, are generally more effectual than any other medicine.

SECT. IV Of the AFTER-PAINS.

FTER-PAINS commonly happen when the fibrous part of the blood is retained in the uterus or vagina, and formed into large clots, which are detained by the fudden contraction of the os internum and externum, after the placenta is delivered: or, if these should be extracted, others will fometimes be formed, though not fo large as the first, because the cavity of the womb is continually diminishing after the birth. The uterus, in contracting, presses down these coagulums to the os internum; which being again gradually stretched, produces a degree of labour-pains, owing to the irritation of its nerves: in consequence of this uneafiness, the woman squeezes the womb as in real-labour; the force being increased,

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the clots are pushed along, and when they are delivered she grows easy. The larger the quantity is of the coagulated blood, the severer are the pains, and the longer they continue.

Women in the first child, seldom have after-pains; because, after delivery, the womb is supposed to contract, and push off the clots: with greater force in the first than in the following labours: after-pains may also proceed from obstructions in the vessels, and irritations at the os internum. In order to prevent or remove these pains, as soon as the placenta is separated and delivered, the hand being introduced into the uterus, may clear of all the coagula. When the womb is felt, through the parietes of the abdomen, larger than usual, it may be taken for granted that there is either another child, or a large quantity of this clotted blood; and which foever it may be, there is a necesfity for its being extracted. If the placenta comes away of itself, and the after-pains are violent, they may be alleviated and carried off by an opiate: for, by fleeping and fweating plentifully, the irritation is removed, the evacuations are increased, the os uteri is infensibly relaxed, and the coagula flide eafily along. When the discharge of the lochia is small, the after-pains, if moderate, ought not to be refrained; because the squeezing which they occasion, promotes the other evacuation, which is necessary for the recovery of the patient. After-pains may also proceed from an obstruction in some of the vessels, occasioning a small inflammation of the os internum and ligaments; N 5 . and

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and the squeezing thereby occasioned may not only help to propel the obstructing sluid, but also (if not too violent) contribute to the natural discharges.

SECT. V. Of the LOCHIA.

XI E have already observed, that the delivery of the child and placenta is followed by an efflux of more or less blood, difcharged from the uterus, which, by the immediate evacuation of the large veffels, is allowed to contract itself the more freely, without the danger of an inflammation, which would probably happen in the contraction, if the great veffels were not emptied at the fame time: but as the fluids in the fmaller veffels cannot be fo foon evacuated or returned into the vena cava, it is necessary that, after the great discharge is abated, a flow and gradual evacuation should continue, until the womb shall be contracted to near the same size which it had before pregnancy; and to this it attains about the eighteenth or twentieth day after delivery, though the period is different in different women.

When the large vessels are emptied immediately after delivery, the discharge frequently ceases for several hours, until the sluids in the smaller vessels are propelled into the larger, and then begins to slow again of a paler colour.

The red colour of the lochia commonly continues till the fifth day, though it is always turning more and more ferous from the begin-

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ning: but, about the fifth day, it flows off a clear, or fometimes (though feldom) of a greenish tint; for the mouths of the vessels, growing gradually narrower by the contraction of the uterus, at last allow the serous part only to pass. As for the greenish hue, it is supposed to proceed from a dissolution of the cellular or cribriform membrane or mucus that surrounded the surface of the placenta and chorion; part of which, being left in the uterus, becomes livid, decays, and dissolving mixes with and tinctures the discharge as it passes.

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Though the lochia, as we have already obferved, commonly continue to the eighteenth
or twentieth day, they are every day diminishing in quantity, and soonest cease in those women who suckle their children, or have had an
extraordinary discharge at first; but the colour, quantity, and duration, differ in different women: in some patients, the red colour
disappears on the first or second day; and in
others, though rarely, it continues more or
less to the end of the month: the evacuation
in some is very small, in others excessive: in
one woman it ceases very soon; in another,
slows during the whole month: yet all of
these patients shall do well.

Some allege, that this discharge from the uterus is the same with that from a wound of a large surface. But it is more reasonable to suppose, that the change of colour and diminution of quantity proceed from the slow contraction of the vessels: because, previous to

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SECT. VI. Of the MILK-FEVER.

A Bour the fourth day, the breasts generally begin to grow turgid and painful. We have formerly observed, that during the time of uterine gestation the breasts in most women gradually increase till the delivery, growing foster as they are enlarged by the vessels being more and more filled with fluids; and by this gradual distention they are prepared for fecreting the milk from the blood after delivery. During the two or three first days after parturition, especially when the woman has undergone a large discharge, the breafts have been fometimes observed to subfide and grow flaccid; and about the third or fourth day, when the lochia begin to decrease, the breafts swell again to their former fize, and firetch more and more, until the milk, being fecreted, is either sucked by the child, or frequently of itself runs out at the nipples. Moft

Most of the complaints incident to women after delivery, proceed either from the obstruction of the lochia in the uterus, or of the milk in the breasts, occasioned by any thing that will produce a fever; such as catching cold, long and severe labour, eating food that is hard of digestion, and drinking sluids that quicken the circulation of the blood in the large vessels; by which means the smaller, with all the secretory and excretory ducts, are obstructed.

The discharge of the lochia being so different in women of different constitutions, and besides in some measure depending upon the method of management and the way of life peculiar to the patient, we are not to judge of her fituation from the colour, quantity, and duration of them, but from the other fymptoms that attend the discharge: and if the woman feems hearty, and in a fair way of recovery, nothing ought to be done with a view to augment or diminish the evacuation. If the discharge be greater than she can bear, it will be attended with all the symptoms of inanition; but as the lochia feldom flow fo violently, as to destroy the patient of a sudden, she may be supported by a proper, nourithing diet, assisted with cordial and restorative medicines. Let her, for example, use broths, gellies, and asfes milk; if the pulse is languid and funk, she may take repeated doses of the Confec. Cardiac. with mixtures composed of the cordial waters and volatile spirits. Subastringents and opiates frequently administered, with the Cort. Peruv. in different forms, and austere wines, are

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of great service. On the other hand, when the discharge is too small, or hath ceased altogether, the symptoms are more dangerous, and require the contrary method of cure; for now the business is to remove a too great plenitude of the vessels in and about the uterus, occasioning tension, pain, and labour, in the circulating sluids; from whence proceed great heat in the part, restlessness, sever, a full hard quick pulse, pains in the head and back, nausea, and difficulty in breathing. These complaints, if not at first prevented, or removed by rest and plentiful sweating, must be treated with venæsection and the antiphlogistic method.

When the obstruction is recent, let the patient lie quiet and encourage a plentiful diaphoresis, by drinking frequently of warm, weak, diluting fluids; such as water-gruel, barley-water, tea, or weak chicken-broth: she may likewise take opiates and sudorisics in different forms as may be agreeable to her stomach. Theriaca Androm. from 36 to 3i. Laud. liquid. from gut. x. to gut. xx. Pilul. saponac. from gr. v. to gr. x. or Syr. de Meconios from 36 to 3i. These may be repeated occasionally, with other forms of opiates; and if they fail to procure rest and sweating, the following diaphoretics, without opium, ought to be administered.

R. Pulv. Contrayerv. Cam. 38. Pulv. Gastors Russ. Sal. Succin. aa. gr. v. Syr. Croci. q. s. f. Bolus statim sumendus cum haust. sequent. et repetats petat. quarta vel sexta quaque bora ad tres vices vel ut opus fuerit.

B. Aq. Cinnamon. ten. 3is. cum Spiritu. Syr. Croci. aa 3ij. Adde Sal. Vol. C. C. gr. iv. m.

Should these methods be used without succels, and the patient, far from being relieved by rest, plentiful sweating, or a sufficient discharge of the obstructed lochia, labour under an hot dry skin, anxiety, and a quick hard and full pulse, the warm diaphoretics must be laid afide; because if they fail of having the defired effect, they must necessarily increase the fever and obstruction, and recourse be had to bleeding at the arm or ankle, to more or less quantity, according to the degree of fever and obstruction; and this evacuation must be repeated as there is occasion. When the obstruction is not total, it is supposed more proper to bleed at the ankle than at the arm; and at this last, when the discharge is altogether stopped. Her ordinary drink ought to be impregnated with nitre, and the following draughts or others of the fame kind prefcribed.

B. Sal. Absynth. Di. Succ. Limon. 38: Aq: Cinnamon. simp. 3is. Pul. Contrayerv. Comp. Di. Sacch. Alb. q. s. f. Haustus statim sumendus, et quarta vel sexta quaque hora repetendus.

If she is costive, emollient and gently opening glysters may be occasionally injected; and her breasts must be somented, and sucked either by the mouth or pipe-glasses. If by these means the sever is abated, and the necessary discharges return, the patient commonly re-

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covers; but if the complaints continue, the antiphlogistic method must still be pursued. If notwithstanding these efforts the fever is not diminished or removed by a plentiful discharge of the lochia from the uterus, the milk from the breafts, or by a critical evacuation by fweat, urine, or stool, and the woman is every now and then attacked with cold shiverings, an abfects or abfectles will probably be formed in the uterus or neighbouring parts, or in the breafts; and fometimes the matter will be translated to other situations, and the feat of it foretold from the parts being affected with violent pains: these abscesses are more or less dangerous, according to the place in which they happen, the largeness of the suppuration, and the good or bad constitution of the patient,

If, when the pains in the epigastric region are violent and the sever increased to a very high degree, the patient should all of a sudden enjoy a cessation from pain without any previous discharge or critical eruption, the physician may pronounce that a mortiscation is begun; especially if at the same time the pulse becomes low, quick, wavering, and intermitting: if the woman's countenance, from being shorid, turns dusky and pale, while she herself and all the attendants conceive her much mended; in that case, she will grow delirious,

and die in a very short time.

What we have faid on this subject, regards that sever which proceeds from the obstructed lochia, and in which the breasts may likewise be affected: but the milk-sever is that in which

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the breasts are originally concerned, and which may happen though the lochia continue to flow in fufficient quantity: nevertheless they mutually promote each other, and both are to be treated in the manner already explained; namely, by opiates, diluents, and diaphoretics in the beginning; and these prescriptions failing, the obstructions must be resolved by the antiphlogistic method described above. The milk-fever alone, when the uterus is not concerned, is not fo dangerous, and much more eafily relieved. Women of an healthy conftitution, who fuckle their own children, have good nipples, and whose milk comes freely, are feldom or never subject to this disorder, which is more incident to those who do not give fuck, and neglect to prevent the fecretion in time, or, when the mik is fecreted, take no measures for emptying their breasts. This fever likewise happens to women who try too foon to fuckle, and continue their efforts too long at one time; by which means the nipples, and confequently the breafts, are often inflamed, fwelled, and obstructed.

In order to prevent too great a turgescency in the vessels of the breasts, and the secretion of milk, in those women who do not choose to suckle, it will be proper to make external application of those things which, by their pressure and repercussive force, will hinder the blood from slowing in too great quantity to this part, which is now more yielding than at any other time: for this purpose, let the breasts be covered with Emp. de minio, Diapalma, or Emp. simp. spread.

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spread upon linen, or cloths dipped in camphorated spirits, be frequently applied to these parts and the arm-pits; while the patient's diet and drink are of the lightest kind, and given in small quantities. Notwithstanding these precautions, a turgescency commonly begins about the third day; but by rest, moderate fweating, and the use of these applications. the tension and pain will subside about the fifth or fixth day, especially if the milk runs out at the nipples: but if the woman catches cold, or is of a full habit of body, and not very abstemious, the tension and pain increafing, will bring on a cold shivering, succeeded by a fever; which may obstruct the other excretions, as well as those of the breast.

In this case, the sudorifics above recommended must be prescribed; and if a plentiful fweat enfues, the patient will be relieved; at the same time the milk must be extracted from her breafts by fucking with the mouth or glaffes. Should these methods fail, and the fever increase, the ought to be blooded in the arm; and, instead of the external applications hitherto used, emollient liniments and cataplasms must be substituted, in order to soften and relax. If in spite of these endeavours the fever proceeds for some days, the patient is frequently relieved by critical sweats, a large discharge from the uterus, miliary eruptions, or loofe stools mixed with milk, which is curdled in the intestines. But should none of these evacuations happen, and the inflammation continue with increasing violence, there is danger of an imposshume, which is to be brought to maturity, and managed like other inflammatory tumours; and no assringents ought to be applied, lest they should produce

feirrhous swellings in the glands.

As the crifis of this fever, as well as of that last described, often confists in miliary eruptions over the whole surface of the body, but particularly on the neck and breafts, by which the fever is carried off, nothing ought to be given which will either greatly increase or diminish the circulating force, but such only as will keep out the eruptions. But if, notwithstanding these cruptions, the fever, inflead of abating, is augmented, it will be neceffary to diminish its force, and prevent its increase by those evacuations we have mentioned above. On the contrary, should the pulse fink, the eruptions begin to retreat inwardly, and the morbific matter be in danger of falling upon the vifcera, we must endeavour to keep them out, by fuch opiates and fudorific medicines as we have already prescribed in obstructions of the lochia; and here blisters may be applied with fuccess. On this subject Sir David Hamilton and Hoffman may be confulted. NA 61 40

SECT. VII. Of the PROLAPSUS VAGINE, REC-

WHEN the head of the child is long retained about the middle of the vagina, the lower part of that sheath sometimes swells; and

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and, as the head comes farther down, is pushed out at the os externum, occasioning great difficulty in delivering the woman: fometimes also the lower part of the rectum is protrued through the sphincter ani, especially if the patient is troubled with the inward piles. The cure of both these complaints confists in reducing the prolapfus: if this cannot be done immediately in the last on account of the fwelling of the protruded part, emollient fomentations and poultices must be used in order to remove the inflammation. When it is reduced, the woman must be confined more than usual to her bed; and if the part falls down again in confequence of her straining at stool or in making water, it must be reduced occasionally, and as she recovers strength the complaint will in all probability vanish; otherwise astringent fumigations or fomentations must be used. If the disorder be of long duration, peffaries, adapted to the part, whether vagina or rectum, must be applied.

A prolapfus uteri may happen from the fame causes, or from any thing that will too much relax the ligament and peritonæum, by which the womb is suspended; such as an inveterate sluor albus, that, by its long continuance and great discharge, weakens the

womb and all the parts.

This misfortune, when it proceeds from labour, does not appear till after delivery, when the uterus is contracted to its smallest fize; nay, not for several weeks or months after that period, until by its weight the

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tion.

os externum is gradually stretched wider and wider, fo as to allow the womb to flip through it; and in this case it descends covered with the vagina, that comes down along with it, and hangs between the thighs; though the os tincæ only can be perceived on account of this covering, the shape and substance of the uterus may be eafily diftinguished.

As this prolapfus comes on gradually, the woman of herfelf can (for the most part) reduce and keep it up while in bed; but when the rifes and walks, it will fall down again. When the complaint is not of long standing, and the womb does not come altogether thro' the os externum, the patient may be cured by aftringent injections: and in the next pregnancy, when the upper part of the uterus is diftended fo as to fill the pelvis and rife above its brim, the os internum will be raifed higher in the vagina; and after delivery, if the woman is confined to her bed for twenty or thirty days, the ligaments generally contract fo as to keep up the womb and prevent any future prolapfus. But when the complaint is of long continuance; when the uterus and vagina descend quite through the os externum, and by the friction in walking, occasioned by the vagina's rubbing against the thighs and the os uteri upon the cloths that are used for supporting it, an inflammation, excoriation, and ulceration, are produced, inviting a greater flux of fluids to the part: these symptoms, joined with a fluor albus from the infide of the uterus, destroy the hope of a second impregna-

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tion, or cure by injections; and we can only promife to palliate the difease, by reducing the uterus and keeping it up with a pessary; by which means, used for a length of time, the parts will recover theirtone, and the disease be radically cured.

If the uterus be so much inflamed, that it cannot be reduced, generally evacuations must be prescribed, and fomentations and poultices applied in order to diminish its bulk, so as that it may be replaced. For this complaint, different kinds of peffaries have been used; some of a globular form; others that open with a fpring, as described in the Medical Esfays of Edinburgh. But those most in use are of a flat form, with a little hole in the middle, and made of cork waxed over, ivory, box, ebony, lignum vitæ, of a triangular, quadrangular, oval, or circular shape. Those that are circular feem best to answer the intention, because we can more easily introduce a large one of that than of any other figure; it lies more commodiously in the vagina; and, as it always tilts a little upwards and downwards, never hinders the passage of the urine or fæces: these instruments, however, ought to be larger or fmaller, according to the laxity or rigidity of the os externum.

There is a peffary lately invented at Paris, which hath an advantage over all others; because the woman can introduce it in the morning, and take it out at night: it is supported and kept in the vagina by a small stalk, the lower end of which forms a little ball that

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moves in a focket; this focket is furnished with straps, which are tied to a belt that surrounds the patient's body. This pessary is extremely well calculated for those who are in an easy way of life; but the other kind is best adapted to hard-working women, who have not time or conveniency to fix or mend the bandage when it wants repair.

SECT. VIII. Of the Evacuations necessary at the End of the Month after Delivery.

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THOSE who have had a sufficient discharge of the lochia, plenty of milk, and suckle their own children, commonly recover with ease; and, as the superfluous sluids of the body are drained off at the nipples, seldom require evacuations at the end of the month: but, if there are any complaints from sulness, such as pains and stitches, after the twentieth day, some blood ought to be taken from the arm, and the bellly gently opened by frequent glysters, or repeated doses of laxative medicines.

If the patient has tolerably recovered, the milk having been at first sucked or discharged from the nipples, and afterwards discussed, no evacuations are necessary before the third or fourth week; and sometimes not till after the first slowing of the menses, which commonly happens about the fifth week; if they do not appear within that time, gentle evacuations must be prescribed, to carry off the plethora and bring down the catamenia.

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THE ASSESSMENT BY ASSESSMENT OF THE PARTY OF CHAP. TILE

Of the MANAGEMENT of new-born Children. with the DISEASES to which they are subject.

Of washing and dressing the Child.

THE child being delivered, the navelfiring tied and cut, a warm cloth or flannel cap put on its head, and its body wrapped in in a warm receiver, it may be given to the nurse or an assistant, in order to be washed clean from that fourf which sometimes covers the whole fcarf-fkin, and is particularly found upon the hairy fealp under the arm-pits, and in the groins. This ablution is commonly performed with warm water, mixed with a fmall quantity of Hungary water, wine, or ale, in which a little pomatum or fresh butter hath been diffolved. This composition cleans all the furface, and the oily part, by mixing with and attenuating the mucus, prepares it for the linen cloth, which dries and wipes of the whole: nevertheless milk and water, or foap and water, is preferable to this mixture.

In laberious or preternatural cases, when confiderable force hath been used in delivering the child, the whole body ought to be examined; and if there is any mark or contusion on the head, it will disappear, if anointed wish pomatum, and gently rubbed or chafed with the accoucheur's hand: if any limb is diflocated or broken, it ought to be reduced

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immediately: luxations, though they feldom happen, are more incident to the shoulder than to any other part, the humerus being eafily diflocated, and as eafily reduced. The bones of the arm and thigh are more subject to fracture, than any other of the extremities: the first is easily cured, because the arm can be kept from being moved; but a fracture in the thigh-bone is a much more troublesome case, because, over and above the difficulty of keeping the bones in a proper fituation, the part is often necessarily moved in cleaning the child. In this case, the best method is to keep the child lying on one fide, after the thigh hath been fecured by proper bandage, fo that the nurse may change the cloth without moving the part; and to lay it upon bolfters or pillows raifed above the wet-nurse. that it may fuck with greater freedom: if any of the bones are bent, they may be brought into their proper form by a flow, gentle, and proper extension. and has reaved to

The navel-ftring must be wrapped in a foft linen rag, and folded up on the belly, over which is to be laid a thick compress, kept moderately tight with a bandage commonly called a belly-band. This compression must be continued for some time, in order to prevent an exomphalus, or rupture, at the navel; and kept tighter and longer on children that are addicted to crying, than on those that are ftill and quiet: yet not fo tight as to be uneafy to the child; and the bandage must be loofened and the part examined every fecond VOL. I.

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day. The navel-string shrinks, dies, and about the fixth, or seventh day commonly drops off from the belly; though not at the ligature, as some people have imagined. This being separated, a pledgit of dry lint must be applied to the navel, and over it the thick compress and bandage, to be continued several weeks, for the purpose mentioned above.

During the time of washing and dressing the child, it ought to be kept moderately warm, especially in the head and breast, that the cold air may not obstruct perspiration; the head and body ought also to be kept tolerably tight with the cloaths, for the convenience of handling, and to prevent its catching cold, especially if the child be weakly; but if it be vigorous and full grown, it cannot be too loofely cloathed, because the brain, thorax, and abdomen, fuffer by too great compression. The cloathing of new-born children ought also to be suitable to the season of the year and the nature of the weather; the extremes of cold and heat being avoided, as equally hurtful and dangerous. Instead of the many superfluous inventions of nurses, and those who make cloaths for children, with a view to make an expensive and pompous appearance, the drefs ought to be contrived with all imaginable simplicity: the child being washed, the navel-string secured, and the head covered with a linen or woollen cap, as already directed, a shirt and waistcoat may be put upon the body, and over it a flannel skirt or petticoat, open before, with a broad headband,

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band, as commonly used, or rather a waistcoat joined to it, so as that they can be put on at once: this ought to be rather tied than pinned before; and, instead of two or more blankets, may be covered with a slannel or susting gown; while the head is accommodated with another cap, adorned with as much sinery as the tire-woman shall think proper to beslow.

In short, the principal aim of this point is, to keep the child's head and body neither too tight nor too slovenly, too hot nor too cold; that it may be warm, though not over-heated; and easy, though not too loose; that respiration may be full and large; that the brain may suffer no compression; and that, while the child is awake, the legs may be at liberty; to reject all unnecessary rollers, cross-cloths, neck-cloths, and blankets; and to use as few pins as possible, and those that are absolutely necessary with the utmost caution.

Sect. II. How to manage when any of the common Paffages are locked up, or the Tongue tied.

WHEN the child cannot make water, because the passage is filled up with mucus; after having unsuccessfully practised the common methods of holding the belly near the fire, and rubbing the parts with Ol. Ruta, &c. we must introduce a probe, or very small catheter, along the urethra into the bladder; an operation much more casily performed in semale than in male children.

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In boys, the prepuce alone is fometimes imperforated; in which case, an opening is easily made. But if there is no passage in the urethra, or even through the whole length of the glans, all that can be done is to make an opening with a lancet or biftory, near the mouth or, sphincter of the bladder, in the lower part of the urethra, where the urine being obstructed, pushes out the parts in form of a tumour; or, if no such tumefaction appears, to perforate the bladder above the pubes with a trocar: this, however, is a wretched and ineffectual expedient, and the other can but at best lengthen out a miserable life. If the anus is imperforated, and the fæces protrude the parts; or if it be covered with a thin membrane, and a bluish or livid spot appears; the puncture and incision commonly succeed. But when the rectum is altogether wanting, or impervious for a confiderable way, the fuccess of the operation is very uncertain: nevertheless it ought to be tried, by making an artificial anus with a bistory, remembering the course of the rectum, and the entry in both fexes. For further information on this fubject, Mauriceau's and Saviard's Observations, and the Memoirs of the Academy of Surgeons, may be confulted.

In female children there is a thin membrane, in form of a crefcent, called the hymen, that covers the lower part of the orifice of the vagina, and is rent in the first coition. The middle of it is sometimes attached to the lower part of the meatus urinarius, and on

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each fide of the bridge is a small opening that will only admit the end of a probe, though it is sufficient for the discharge of the menses. This obstruction is commonly unknown till marriage, and hath often proved fatal to the unfortunate woman, who had concealed it through excess of modesty, and afterwards funk into a deep melancholy which cost her her life, rather than submit to inspection, and the easy cure of having the attachment fnipt with a pair of scissars. On this consideration, Saviard advises all accoucheurs to inspect this part in every female child they deliver; and if there should be such a defect, to remedy it during her childhood: or, if the entry is wholly covered with the membrane, let a fufficient perforation be made, which will prevent great pain and tension in their riper years, when the menses, being denied passage, would accumulate every month, and at last push out this and the neighbouring parts, in form of a large tumour, the cause of which is generally unknown until it be opened.

Sometimes a thin membrane, rifing from the under part of the mouth, stretches almost to the tip of the tongue, bracing it down, fo as to hinder the child from taking hold of the nipple and fucking. This diforder, which is called tongue-tying, is eafily remedied by in-troducing the fore-finger into the child's mouth, raifing up the tongue, and fnipping the bridle

with a pair of feiffars.

If, instead of a thin membrane, the tongue is confined by a thick fleshy substance, the fafest

fafest method is to direct the nurse to stretch it frequently and gently with her finger; or, if it appears like a soft fungus, to touch it frequently and cautiously with lunar caustic or Roman vitriol: but we ought to take care that we are not deceived by an inflammation that sometimes happens in the birth, from the accoucheur's helping the head along with his singer in the child's mouth.

SECT. III. Of Mould-shot Heads, Contusions, and Exceriations.

IN laborious and lingering labours, the L child's head is often long confined, and fo compressed in the pelvis, that the bones of the upper part of the cranium are fqueezed together, and ride over one another in different manners, according as the head prefented. If the offa parietalia rife over the os frontis, the case is called the mould-sbot; if over the occiput, it goes by the name of the borfe-shoe mould. When the fontanel presents, (though this is feldom the case), and is pushed down, the form of the head is raised up in the shape of a hog's back; whereas, in the former case, the vertex or crown of the head presented, and the whole was turned from a round to a very long figure. If the head is kept long in the pelvis, and the child not destroyed by the compression of the brain, either before or foon after delivery, it commonly retains more or less of the shape acquired in that fituation, according to the strength

strength or weakness of the child. When the bones begin to ride over one another in this manner, the hairy scalp is felt lax and wrinkled; but, by the long pressure and obstructions of the circulating fluids, it gradually fwells and

forms a large tumour.

In these cases, when the child is delivered, we ought to allow the navel-firing, at cutting, to bleed from one to two or three spoonfuls. especially if the infant be vigorous and fullgrown; and to provoke it by whipping and ftimulating; for the more it cries, the fooner and better are the bones of the cranium forced outwards into their natural fituation ? or, if the head hath not been long compressed, and is not much inflamed, we can fometimes with our hands reduce it into its pristine shape. The meconium ought also to be purged off as foon as possible, to give freer scope to the circulating fluids in the abdomen, and make a revulsion from the furcharged and compressed brain. This may be effected with suppositaries, glysters, repeated doses of Ol. Amygdal. d. mixed with Pulv. Rhabarb. or De Althaa, or Syr. de Cichoreo, cum Rheo.

If the child is feized with convulsions foon after delivery, in confequence of this compression, and the vessels of the navel-string have not been allowed to bleed, the jugular vein ought immediately to be opened, and from one to two ounces of blood taken away; an operation easily performed in young children: the urine and meconium must be difcharged, and a small blister applied between the

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the scapulæ. When the scalp is bruised, inflamed, or swelled, let it be anointed or embrocated with a mixture of Ol. Chamomel. Acet. and Spt. Vin. camphorat. and cerates

and poultices applied to the parts.

If the tumefaction is large, and we feel a confiderable fluctuation of extravafated fluids, which cannot be taken up by the abforbent veffels, affifted with those applications, the tumour must be opened; though generally there is no occasion for a large incision, because, after the sluid is once discharged, the hollow scalp, by gentle pressure, is more casily joined in children than in older subjects.

When the head is mishapen, it should not be bound or pressed, but left lax and easy; lest, the brain being compressed, convulsions

should enfue; es alla signo mal corre ad l

The body of the child is fometimes covered all over with little red spots, called the red gum, and commonly proceeding from the coltivenefs of the child, when the meconium hath not been fufficiently purged off at first. And here it will not be improper to observe, that as the whole tract of the colon is filled with this viscid excrement, which hath been gradually accumulated for a confiderable time; and as the small intestines, stomach, and gullet, are lined with a glary fluid or mucus; the child ought to take no other nourishment than pap as thin as whey, to dilute this fluid, for the first two days; or indeed, till it sucks the mother's milk, which begins to be fecreted about the third day, and is at first sufficiently purgative

purgative to discharge these humours, and better adapted for the purpose than any artisi-

cial purge.

If the mother's milk cannot be had, a nurse lately delivered is to be found; and if the purgative quality of her milk is decreased, she must be ordered to take repeated small doses of manna or lenitive electuary, by which it will recover its former virtue, and the child

be fufficiently purged.

If the child is brought up by hand, the food ought to imitate as near as possible the mother's milk : let it confift of loaf-bread and water boiled up together, in form of panada, and mixed with the fame quantity of new cow's milk; and fometimes with the broth of When the child is costive. fowl or mutton. two drachms of manna, or from two to four grains of rhubarb, may be given: and when the stools are green and curdled, it will be proper to absorb the prevailing acid with the testaceous powders, such as the Chel. Cancror. simp. or Test. Oftrear. given from the quantity of ten grains to a scruple: and for this purpose the Magnesia alba is recommended, from one to two drachms a-day, as being both opening and absorbent. The red gum may likewise proceed from the officiousness of the nurse, by which the fcarf skin hath been abraded or rubbed off; in which case the child must be bathed in warm milk, and the parts foftened with pomatum: the fame bath may be also used daily in the other kind, and the belly kept open with the aforementioned medicines; wit)

with which some fyrup, tincture, or powder of rhubarb, may be mixed, or given by itself,

if the stools are of a greenish hue.

Excoriations behind the ears, in the neck and groin of the child, are sometimes indeed unavoidable in fat and gross habits; but most commonly proceed from the careleffness of the nurse, who neglects to wash and keep the parts clean; they are, however, eafily dried up and healed, with Unguent. Alb. Pulv. e Cerussa, or fullers earth. Yet we ought to be cautious in applying drying medicines behind the ears, because a discharge in that part frequently prevents worfe diseases.

SECT. IV. Of the APTHA.

HE aptha, or thrush, is a disease to which new born children are frequently fubect, and is often dangerous when neglected at the beginning. This disease proceeds from weakness and laxity of the contracting force of the stomach and intestines, by which the acescent food is not digested; and from a defect in the necessary fecretion of bile, with which it ought to be mixed. This prevailing acid in the primæ viæ produces gripings and loofe green stools, that weaken the child more and more, deprives it of proper nourishment and rest, and occasion a fever from inanition and irritation. The smallest vessels at the mouths of the excretory ducts in the mouth, gullet, stomach, and intestines, are obstructed and ulcerated in consequence of the child's

child's weakness, and acrimonious vomitings, belchings, and stools, and little foul ulcers are formed.

These first appear in small white specks on the lips, mouth, tongue, and at the fundament: they gradually increase in thickness and extent; adopt a yellow colour, which in the progress of the distemper becomes duskish, and the watery stools (called the watery gripes) become more frequent. The whole inner furface of the intestines being thus ulcerated and obstructed, no nourishment enters the lacteal veffels; fo that the weakness and difeafe are increased, the milk and pap which are taken in at the mouth passes off curdled and green, the child is more and more enfeebled, and the brown colour of the apthadeclares a mortification and death at hand. Sometimes, however, the apthæ are unattended by the watery stools; and sometimes these last are unaccompanied with the aptha.

In order to prevent this fatal eatastrophe, at the first appearance of the disorder we ought to prescribe repeated doses of testaceous powders to absorb and sweeten the predominant acid in the stomach, giving them from ten to twenty grains in the pap, twice or three times a day; and on every third night, from three to sive grains of the Pulv. Rhei, Julapse Creta; oily and anodyne glysters, with epithems to the stomach, may also be administered. When these and every other prescription fail, the child, if not much weakened, is sometimes cured by a gentle vomit, consisting of Pulv.

Pulv. Ipecacuan. gr. 1. given in a spoonful of barley-water, and repeated two or three times at the interval of half an hour between each. When the child is much enseebled, the Oleo-Saccharum Cinnamomi or Anisi, mixed with the pap, is sometimes serviceable. If the milk is either too purgative or binding, the nurse should be changed, or take proper medicines to alter its quality; or, if the child has been brought up by hand, woman's milk may be given on this occasion, together with weak broths; but if the child cannot suck, the milk of cows, mares, or asses, may be substituted in its room, diluted with barley-water.

SECT. V. Of TEETHING.

are taken in at the mouth pulles of

So ting or award the below countries HILDREN commonly begin to breed their fore-teeth about the feventh, and fometimes not before the ninth month; nay, in fome the period is still later. Those who are healthy and lax in their bellies, undergo dentition easier than fuch as are of a contrary constitution. When the teeth shoot from their fockets, and their sharp points begin to work their way through the periosteum and gums, they frequently produce great pain and inflammation, which, if they continue violent, bring on feverish symptoms and convulsions, that often prove fatal. In order to prevent these misfortunes, the swelled gum may at first be cut down to the tooth, with a bistory or fleam; by which means the patient is often relieved immediately: but if the child is ftrong, strong, the pulse quick, the skin hot and dry, bleeding at the jugular will be also necessary, and the belly must be kept open with repeated glysters. On the other hand, if the child is low, sunk, and emaciated, repeated doses of Spt. C. C. Tinet. Fuligin. and the like, may be prescribed; and blisters applied to the back, or behind the ears.

CHAP. III.

Of the requisite QUALIFICATIONS of Accoucheurs, Midwives, Nurses who attend lying-in Women, and wet and dry Nurses for Children.

SECT. I. Of the Accouching.

THOSE who intend to practife Midwifery ought first of all to make themselves masters of anatomy, and acquire a competent knowledge in surgery and physic; because of their connection with the obstetric art, if not always, at least in many cases. He ought to take the best opportunities he can find of being well instructed; and of practising under a master, before he attempts to deliver by himself.

In order to acquire a more perfect idea of the art, he ought to perform with his own hands upon proper machines, contrived to convey a just notion of all the difficulties to be met with in every kind of labour; by which means he will learn how to use the forceps and crotchets

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crotchets with more dexterity, be accustomed to the turning of children, and consequently be more capable of acquirting himfelf in troublefome cases, that may happen to him when he comes to practife among women: he should also embrace every occasion of being present at real labours; and indeed of acquiring every qualification that may be necessary or convenient for him in the future exercise of his profession. But, over and above the advantages of education, he ought to be endowed with a natural fagacity, refolution, and prudence; together with that humanity which adorns the owner, and never fails of being agreeable to the distressed patient: in consequence of this virtue, he will affift the poor as well as the rich, behaving always with charity and compassion. He ought to act and speak with the uticost delicacy of decorum, and never violate the trust reposed in him, fo as to harbour the least immoral or indecent defign; but demean himself in all respects suitable to the dignity of his profession. o ask at we applied that a said the second of the states of the second

SECT. II. Of the MIDWIFE.

A MID WIFE, though the can hardly be supposed mistress of all these qualifications, ought to be a decent sensible woman, of a middle age, able to bear fatigue: she ought to be perfectly well instructed with regard to the bones of the pelvis, with all the contained parts, comprehending those that are subservient to generation; she ought to be well skilled in

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the method of touching pregnant women; and know in what manner the womb stretches, together with the fituation of all the abdominal viscera: she ought to be perfectly mistress of the art of examination in time of labour, together with all the different kinds of labour. whether natural or preternatural, and the methods of delivering the placenta: the ought to live in friendship with other women of the same profession, contending with them in nothing but in knowledge, fobriety, diligence, and patience: fhe ought to avoid all reflections upon men-practitioners; and when she finds herself at a lofs, candidly have recourfe to their affiftance: On the other hand, this confidence ought to be encouraged by the man, who, when called, instead of openly condemning her method of practice, (even though it should be erroneous), ought to make allowance for the weakness of the fex, and rectify what is amis, without exposing her mistakes. This conduct will as effectually conduce to the welfare of the patient, and operate as a filent rebuke upon the conviction of the midwife; who, finding herfelt treated fo tenderly, will be more apt to call for necessary assistance on future occasions, and to confider the accoucheur as a man of honour and a real friend. These gentle methods will prevent that mutual calumny and abuse which too often prevail among the male and female practitioners; and redound to the advantage of both: for no accoucheur is fo perfect, but that he may err fometimes; and on fuch occasions he must expect to meet with retaretaliation from those midwives whom he may have roughly used.

SECT. III. Of NURSES in general.

NURSES, as well as midwives, ought to be of a middle age, fober, patient, and discreet, able to bear fatigue and watching, free from external deformity, cutaneous eruptions, and inward complaints, that may be troublesome or infectious.

NUMB. I.

NURSES that attend lying-in women ought to have provided, and in order, every thing that may be necessary for the woman, accoucheur, midwife, and child; fuch as linen and cloths, well aired and warm, for the woman and the bed, which she must know how to prepare when there is occasion; together with nutmeg, fugar, spirit of hartshorn, vinegar, Hungary water, white or brown caudle ready made, and a glyster-pipe sitted. For the use of the accoucheur, she must hang a doubled sheet over the bed-fide, and prepare warm cloths, pomatum, thread, warm and cold water, and two hand-basons; and for dressing the child, she must keep the cloths warm, and in good order. After delivery, her bufiness is to tend the mother and child with the utmost care, and follow the directions given to her relating to the management of each.

That the mother herself should give suck, would certainly be most conducive to her own

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recovery, as well as to the health of the child; but when this is inconvenient, or impracticable, from her weakness or circumstances in life, a wet-nurse ought to be hired, possessed of the qualifications above described, as well as of those that follow.

NUMB: II.

THE younger the milk is, the better will it agree with the age of the infant. The nurse is more valuable, after having brought forth her second child than after her first; because the is endued with more knowledge and experience touching the management of children. She ought to have good nipples, with a fufficient quantity of good milk: the abundance or feantinels of the fecretion may be diftinguished by the appearance of her own child; and the quality may be ascertained by examining the milk, which she may be ordered to pour into a wine glass, about two or three hours after the hath eaten and drank, and fackled her own child. If, when falling in a fingle drop upon . the nail, it runs off immediately, the milk is too thin; if the drop stand in a round globe, it is too thick; but when the drop remains in a flattened form, the milk is judged to be of a right confiftence; in a word, it may be as well diftinguished by its opacity or transparency, when it is dashed upon the fide of the glass: besides, it ought to be sweet to the take, and in colour inclining to blue rather than to yellow. Red-haired women, or fuch as are very fair and delicate, are commonly objected to in the quality

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quality of nurses: but this maxim is not without exceptions: and on this subject Boer. haave's Institutes, with Haller's Commentary, may be confulted said ad or along shaunday

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Although it is certainly most natural for children to fuck, it may be fometimes necesfary to bring them up by hand; that is, nourish them with pap: because proper wet nurfes cannot always be found, and many children have fuffered by fucking diseased women. Some can never be brought to fuck, although they have no apparent hindrance; and others are prevented by fome swelling or disorder about the mouth or throat. and unidewest sensit

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Upon fuch occasions, we must choose an elderly woman properly qualified for the task, and well accustomed to the duties of a dry nurse. The food (as we have formerly observed) ought to be light and simple, in quality refembling as nearly as possible the mother's milk, fuch as thin panada mixed with cow's milk and fweetened with fugar; or, should the child be costive, instead of fugar, honey or manna may be used. If there is any reafon to believe that the loaf-bread or biscuit is made of flour which hath been mixed with alum for the fake of the colour, the common panada ought in this case to be laid aside, in favour of thick water-gruel, mixed with milk, and sweetened as above.

Some children thrive very well on this diet; but when it is neither agreeable to their palates Hilsub

lates nor nourishing, a wet nurse must be procured, before the child is too much emaciated and exhausted; and if it can suck, the good effects of the milk will soon be manifest. But, for further information on this head, the reader may confult Dr Cadogan's Letter on Nurfing of Children.

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ANATOMICAL TABLES,

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EXPLANATIONS,

AND AN ABRIDGMENT OF THE

PRACTICE OF MIDWIFERY,

INTENDED TO ILLUSTRATE

THE TREATISE AND CASES.

THE FIRST TABLE

REPRESENTS, in a front view, the Bones of a well-formed Pelvis.

A The five vertebra of the loins.

B The os facrum.

C The os coccygis.

D.D The offa ilium.

E.E The offa ischium.

F The offa pubis.

G-The foramina magna.

H.H The acetabula.

LI.I.I.I The brim of the pelvis, or that circumference of its cavity which is described at the sides by the inferior parts of the offa ilium, and at the back and fore parts by the superior parts of the offa pubis and facrum.

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In this Table, besides the general structure and figure of the leveral bones, the dimenfions of the brim of the pelvis, and the distance between the under parts of the offa ischium, are particulaly to be attended to: from which it will appear, that the cavity of the brim is commonly wider from fide to fide. than from the back to the fore part, but that the fides below are in the contrary proportion. The reader, however, ought not from this to conclude, that every pelvis is similar in figure and dimensions, since even well-formed ones differ in some degree from each other. In general, the brim of the pelvis measures about five inches and a quarter from fide to fide, and four inches and a quarter from the back to the fore part; there being likewise the same distance between the inferior parts of the offa ischium. All these measures, however, must be understood as taken from the skeleton; for in the fubject, the cavity of the pelvis is confiderably diminished by its teguments and contents. Correspondent also to this diminution, the usual dimensions of the head of the full-grown feetus are but three inches and a half from ear to ear, and four inches and a quarter from the fore to the hind head.

Vide Tab. XVI. XVII. XVIII. Also Vol. I. Chap. i. Sect. 1. 2. 3. where the dimensions of the pelvis as well as of the head of the fætus, and the manner in which the same is protruded in labour through the basin, are fully treated of. Consult likewise Vol. II. Coll. i.

No 1. 2. where cases are given of complaints of the pelvis arising from difficult labours.

THE SECOND TABLE,

Gives a lateral and internal view of the Pelvis, the fame being divided longitudinally.

A The three lower vertebræ of the loins.

and the controlled the controlled

B The os facrum.

C The os coccygis.

D The left os ilium.

E The left os ischium.

F The os pubis of the same side.

G The acute process of the os ischium.

H The foramen magnum.

1.I.I The brim of the pelvis.

THIS Plate shows the distance from the fuperior part of the os facrum to the offa pubis, as well as from the last-mentioned bones to the coccyx, which in each amounts to about four inches and a quarter. The depth likewise is shown of the posterior, lateral, and anterior parts of the pelvis, not in the line of the body, but in that of the pelvis from its brim downward, which is three times deeper on the posterior than anterior part, and twice the depth of the last at the fides.

From this view appears also the angle which than is formed by the last vertebra of the loins and the superior part of the os sacrum, as likewise last not the concavity or hollow space in the posterior great internal part of the pelvis, arising from the they posterior

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F G. H.

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curvature of the last-mentioned bone and coccyx; finally, the distance from which to the polterior parts of the offa ischium is here expreffed.

Vide Tab. XVI. XVII. XVIII. XIX. Alfo Vol. I. and II. as referred to in the former Table. er and co.

THE THIRD TABLE,

Exhibits a front-view of a distorted Pelvis. .

A The five vertebræ of the loins.

B The os facrum.

C The os coccygis.

D.D The offa ilium.

E.E The offa ischium.

F The offa pubis.

F The offa pubis.
G.G The foramina magna.

H.H The acetabula.

FROM this Plate may appear the great danger incident to both mother and child when the pelvis is distorted in this manner; it being only two inches and an half at the brim from he posterior to the anterior part, and the same distance between the inferior parts of each os is schium. Vide Tab. XXVII, where the pelvis sone quarter of an inch narrower at the brim than this, but sufficiently wide below. Vari-dous are the forms of distorted basins, but the last mentioned is the most common. It is a r great happiness, however, in practice, that they are feldom so narrow, though there are

instances where they have been much more so. The danger in all such cases must increase or diminish according to the degree of distortion of the pelvis and size of the child's head.

Vide Vol. I. Book I. Chap. i. Sect. 4. 5. and Vol. II. Coll. 1. No 3. 4. 5. Also Coll. 21.

27. and 29.

THE FOURTH TABLE,

Shows the External Female Parts of Gene-

A The lower part of the abdomen.

B.B The labia pudendi separated.

C The clitoris and præputium.

D.D The nympha.

E The fossa magna, or os externum.

F The meatus urinarius.

G The franum laborium.

H The perinaum.

of The anustrus perfect and or median as

K The part that covers the extremity of the coccyx.

L.L. The parts that cover the tuberofities of

the offa ifchium. of the the india months and and alle

As it is of great consequence to every practitioner in midwifery to know exactly the situation of the parts concerned in parturition, and which have not been accurately described by former anatomists with a view to this particular branch, I have given this draught from one of the preserved subjects which I keep by

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me, in order to demonstrate these parts in the ordinary course of my lectures. From a view, then, of the situation of the parts, it appears; that the os externum is not placed in the middle of the inferior part of the pelvis, but at the anterior and inferior part of the pubes; and that the labia cover likewise the anterior part of these bones.

Secondly, It may be observed, that as the frænum labiorum, which is nearly adjoining to the inferior part of the offa pubis, is only about an inch from the anus, between which and the coccyx there is about three inches distance; it follows, that the anus is nearer to the first-mentioned bones than to the latter.

Thirdly, The view of this and the following table will furnish proper hints with respect to the method of touching or examining the os uteri, without hurting or inflaming the parts; as it appears that the os externum is placed forwards towards the pubes, and the os uteri backwards towards the rectum and coccyx. By this wife mechanism of nature many inconveniences are often prevented, which must happen if these parts were opposite to each other, and fituated in the middle of the inferior part of the pelvis; particularly a prolapfus of the vagina and uterus, either in the unimpregnated state or in any of the first four months of pregnancy; as also too sudden deliveries in any of the last months.

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Fourthly, From a view of the fituation of the parts, it will appear, that in labour, when the os uteri is sufficiently opened to allow a Vol. I.

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passage for the head of the fœtus, the same is protruded to the lower part of the vagina, by which the external parts are pushed out in form of a large tumour, as in Table XV.

Lastly, It may be observed, that when it is necessary to dilate the os externum, the principal force ought to be applied downwards and towards the rectum, to prevent the urethra and neck of the bladder from being hurt or inflamed.

See Vol. I. Book I. Chap. 2. Sect. 1. Vol. II.

THE FIFTH TABLE.

FIGURE I. Gives a front view of the Uterus in fitu suspended in the vagina; the anterior parts of the offa ischium, with the offa pubis, pudenda, perinæum, and anus, being removed, in order to show the internal parts.

A The last vertebra of the loins.

B.B The offa ilium. 19 19 10 6

D.D The inferior and posterior parts of the offa ischium. Vide Table XXIX. where the offa pubis and the anterior parts of the offa ischium are represented by dotted lines.

E The part covering the extremity of the

coccyx.

F The inferior part of the rectum.

G.G The vagina cut open longitudinally, and stretched on each side of the collum uteri,

to show in what manner the uterus is suspended in the fame.

H.H Part of the vesica urinaria stretched on each fide of the vagina and inferior part of the fundus uteri.

I The collum uteri.

K The fundus uteri.

L.L The tubæ Fallopianæ and fimbriæ.

M.M The ovaria.

N.N The ligamenta lata and rotunda.

O.O The superior part of the rectum.

FIGURE II. Gives a view of the internal parts as seen from the right groin, the pelvis being divided longitudinally.

A The lowest vertebra of the loins.

BC The os facrum and coccyx, with the integuments.

D The left os ilium.

E The inferior part of the left os ischium.

F The os pubis of the fame fide.

G The foramen magnum.

H The acetabulum.

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71, to I.I.I The inferior part of the rectum and anus.

K The os externum and vagina; the os uteri lying loofely in the fame.

L The vefica urinaria.

M.N The collum and fundus uteri, with a view of the cavity of both. The attachment of the vagina round the outfide of the lips of the mouth of the womb is here likewise shown, as also the situation of the uterus, as it is presfed downwards and backwards by the intestines instruction of P 2

and urinary bladder into the concave and inferior part of the os facrum.

O The ligamenta lata and rotunda of the left

fide.

P.P The Fallopian tube, with the fimbria.

Q The ovarium of the same side.

R.R The fuperior part of the rectum and inferior part of the colon.

FIGURE III. Gives a front view of the Uterus in the beginning of the first month of pregnancy; the anterior part being removed, that the Embryo might appear through the amnios, the chorion being diffected off.

A The Fundus uteri.

B The collum uteri, with a view of the rugous canal that leads to the cavity of the fundus.

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C The as uteri.

Vide Vol. I. Book L. Chap. 2. Sect. 2. 3. Vol. II. Coll. 3.

THE SIXTH TABLE.

FIGURE I. In the same view and section of the parts as in the first sigure of the former Table, shows the *Uterus* as it appears in the second or third month of pregnancy, its anterior part being here likewise removed.

F The anus

G The vagina, with its plica.

H.H The posterior and inferior part of the winary

urinary bladder extended on each fide, the anterior and superior part being removed.

I.I The mouth and neck of the womb, as raifed up when examining the same by the touch, with one of the singers in the vagina.

K.K The uterus as stretched in the second or third month, containing the embryo, with the placenta adhering to the fundus.

IT appears from this and the former Table. that at this time nothing can be known, with respect to pregnancy, from the touch in the vagina, as the refistance of the uterus is so inconfiderable that it cannot prevent its being raifed up before the finger; and even were it kept down, the length of the neck would prevent the stretching being perceptible. The uterus likewise not being stretched above the pelvis, little change is made as to the figure of the abdomen, further than that the intestines are raised a little higher; whence possibly the old observation of the abdomen being a little flatter at this period than usual, from the intestines being pressed more to each side. Women at this period miscarry oftener than at any other. It is a great happiness, however, in practice, that although they are frequently much weakened by large discharges, yet they rarely fink under the fame, but are fooner or later relieved by labour coming on, which gradually stretches the neck and mouth of the womb, by the membranes being forced down with the waters; and if the placenta is separated from the internal furface of the uterus, all P 2 MS.

its contents are discharged. But if the placenta still adheres, the membranes break, the waters and sectus are expelled, and the slooding diminishes, from the uterus contracting close to the secundines, which also are usually dis-

charged fooner or later.

From the structure, finally, of the parts, as represented in this and the former Table, it may appear, that it is much fafer to restrain the flooding, and support the patient, waiting with patience the efforts of nature, than to endeavour to stretch the os uteri, and deliver either with the hand or instruments, which might endanger a laceration and instammation of the parts.

Vide C in Table XXXVII. Also Vol. I. Book II. Chap. 2. Sect. 2. 3. 4. Vol. II. Coll. 12. No 2.

FIGURE II. Represents the Uterus in the fourth or fifth month of pregnancy, in the same view and section of the parts with the former figure, excepting that in this the anterior part of the collum uteri is not removed.

In the natural situation, the mouth and lips of the womb are covered with the vagina, and these parts are contiguous to each other; but here the vagina G is a little stretched from the neck and lips of the former, in order to show the parts more distinctly. I, The neck of the womb, which appears in this figure thicker, shorter, and softer, than in the former. K, The inferior part of the fundus uteri; the stretching of which can sometimes be felt through the vagina, by pushing up a sin-

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ger on the anterior or lateral part of the fame. The uterus now is so largely stretched as to fill all the upper part of the pelvis, and begins also to increase so much as to rest on the brim. and to be supported by the same, the fundus at the fame time being raifed confiderably above the pubes. From the abdomen being now more stretched, the woman is more fenfible of her growing bigger; and the uterus also, from the counter-pressure of the contents and parietes of the abdomen, is kept down, and the os uteri prevented from rifing before the finger as formerly. In lean women, the stretching of the uterus can sometimes be perceived in the vagina at this period as well as above the pubes: but nothing certain can be discovered from the resistance or feel of the mouth of the womb or lips, which are commonly the fame in the first months of pregnancy as before it.

The fize or bulk of the fœtus is finally here to be observed, with the placenta adhering to

the posterior part of the uterus.

Vide the references to Vol. L and II. in the former Table.

THE SEVENTH TABLE,

Represents the abdomen of a woman opened in the fixth or seventh month of pregnancy.

A.A.A.A The parietes of the abdomen opened, and turned back to show . o.B The uterus; largest to invitate allego my

C.C.C The intestines raised upwards.

D The labia pudendi, which are sometimes affected in pregnancy with cedematous fwellings, occasioned by the pressure of the uterus upon the returning veins and lymphatics. If the labia are fo tumefied as to obstruct the patient's walking, the complaint is removed by puncturing the parts affected. By which means the ferous fluid is discharged for the present, but commonly recurs; and the same operation must be repeated several times, perhaps, before delivery; after which, however, the tumefaction entirely subsides. Here it may be observed, that this complaint can feldom or never obstruct delivery, as the labia are situated at the anterior part of the offa pubis, and can rarely affect the stretching of the frænum, perinæum, vagina, and rectum. From this figure it appears, that the stretching of the uterus can eafily be felt at this period in lean subjects, through the parietes of the abdomen, especially if the intestines do not lie before it. In general indeed, as the uterus stretches, it rifes higher; by which means the intestines are likewise raised higher, and are also pressed to each fide. Hence the nearer the woman is to her full time, the stretching is the more eafily felt.

Vide Vol. I. Book I. Chap. 3. Sect. 3. Book III. Chap. 1. Sect. 2. and Vol. II. Coll. 12. 13.

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THE EIGHTH TABLE.

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In the same view and section of the parts as in Table VI. is represented the *Uterus* of the former Table, in order to show its contents, and the internal parts as they appear in the fixth or seventh month of pregnancy.

A The uterus stretched up to the umbilical region.

B.B The superior part of the offa ilium.

C.C The acetabula.

D.D The remaining posterior parts of the

E The anus.

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F The vagina.

G The bladder of urine.

H The neck of the womb shorter than in Table VI. and raised higher by the stretching of the uterus above the brim of the pelvis.

I The veffels of the uterus larger than in the unimpregnated state.

K.K The placenta adhering to the inferior

and posterior part of the uterus.

L.L The membranes that furround the fætus, the head of which is here represented (as well as of those in Table VI.) situated downwards at the inserior part of the uterus, and which I am apt to believe is the usual situation of the setus when at rest, and surrounded with a great quantity of waters, as the head is heavier than any other part. With respect to the situation

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fituation of the body of the fatus, though the fore parts are often turned towards the fides and posterior parts of the uterus, they are here, as well as in the foregoing Table, represented at the anterior part or forwards, in order to show them in a more distinct and picturesque manner.

Vide Vol. I. Book I. Chap. 3. Sect. 3. 4. Vol. II. Coll. 13. No 1.

From this Table may appear the difficulty of stretching the os uteri in flooding cases. even at this period, from the length and thickness of the neck of the womb, especially in a first pregnancy: much the same method, however, is to be followed here as was directed in Table VI. till labour comes on to dilate the os If the flooding is then confiderable, the membranes should be broken, that the uterus may contract, and thereby leffen the discharge. The labour likewise, if it is neceffary, may be affifted by dilating the os uteri in time of the pains; which also, if wanting, may be provoked by the fame method, when the patient is in danger. If this danger is imminent, and the woman feems ready to expire, the uterus, as appears from this Table, is at this time fufficiently stretched to receive the operator's hand to extract the fœtus, if the os internum can be fafely di lated. I but any self lo may noissini on

Lastly, It may be observed that women are in greater danger in this period and after wards, than in the former months.

Vide Vol. I. Book. III. Chap. 4. Sect. 3. No 1

2. 2. Vol. III. Coll. 22. No 2. See alfo, in the Edinburgh Physical and Literary Observations, Art. xvii. the diffection of a woman with child, by Dr Donald Monro, physician at London.

THE NINTH TABLE,

In the same view and section of the parts with the former, represents the Uterus in the eighth or ninth month of pregnancy.

A The uterus as stretched to near its full extent, with the waters, and containing the fatus entangled in the funis, the head presenting at the upper part of the pelvis.

B.B The superior part of the offa ilium.

C.C The acetabula.

D.D The remaining posterior parts of the Confult De Hunger's elegant piemuidale allo

E The coccyx.

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F The inferior part of the rectum.

G.G.G The vagina stretched on each fide.

H The os uteri, the lips of which appear larger and fofter than in the foregoing Table, the neck of the womb being likewife stretched to its full extent, or entirely obliterated.

I.I Part of the vesica urinaria.

K.K The placenta at the superior and posterior part of the uterus. is the state of E.A.

L.L The membranes.

M The funis umbilicalis.

This and the foregoing Table show in what manner

manner the uterus stretches, and how its neck grows shorter, in the different periods of pregnancy; as also the magnitude of the sœtus, in order more fully to explain Vol. I. Book I. Chap. 3. Sect. 4, 5. also Book III. Chap. 1. Sect. 1. 2. likewise Vol. II. Coll. 13. No 1.

Notwithstanding it has been handed down as an invariable truth, from the earliest accounts of the art to the present times, that when the head of the fœtus presented, the face was turned to the posterior part of the pelvis; yet from Mr Oald's observation, as well as from some late diffections of the gravid uterus, and what I myself have observed in practice, I am led to believe that the head presents for the most part as is here delineated, with one ear to the pubes, and the other to the os sacrum; though sometimes this may vary, according to the form of the head, as well as that of the pelvis.

Confult Dr Hunter's elegant plates of the

gravid uterus,

THE TENTH TABLE,

Gives a front view of twins in utero in the beginning of labour; the anterior parts being removed, as in the preceding Tables.

A The uterus as stretched with the membranes and waters.

B.B The superior parts of the offa ilium.

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D.D The offa ifchium.

E The coccyx.

F The lower part of the rectum.

G.G The vagina. Visits is said as also

H The os internum stretched open about a finger's breadth, with the membranes and waters in time of labour-pains.

I.I The inferior part of the uterus stretched with the waters which are below the head of the

child that presents.

K.K The two placentas, adhering to the posterior part of the uterus, the two fatuses lying before them; one with its head in a proper position, at the inferior part of the uterus; and the other situated preternaturally, with the head to the fundus: the bodies of each are here entangled in their proper sums, which frequently happens in the natural as well as preternatural positions.

L.L.L The membranes belonging to each

placenta.

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This representation of twins, according to the order observed in my Treatise of Midwifery, ought to have been placed among the last Tables; but as that was of no consequence, I have placed it here in order to show the os uteri grown much thinner than in the former figure, a little open and stretched by the waters and membranes which are pushed down before the head of one of the setuses in time of a labour-pain. With respect to the position of twins, it is often different in different cases; but was thus in a Vol. I.

late diffection of a gravid uterus by Dr Mackenzie.

Vide Vol. I. Book 3. Chap. 1. Sect. 4. and Chap. 5. Sect. 1. and Vol. II. Coll. 14. and Vol. III. Coll. 37.

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THE ELEVENTH TABLE,

Exhibits another front view of the Gravid Uterus in the beginning of labour; the anterior parts being removed, as in the former Table; but in this the Membranes not being broken, form a large bag containing the Waters and Fatus.

A The substance of the uterus.

B.B.C.C.D.D The bones of the pelvis.

E The coccyx.

F The inferior part of the rectum.

G.G.G.G The vagina.

H.H the mouth of the womb largely stretched in time of a pain; with I, the membranes and waters. This circumstance makes it usually certain that labour is begun; whereas, from the degree of dilatation represented in the former Table, there is little to be ascertained unless the pains are regular and strong, the os uteri being often found more open several days, and even weeks, before labour commences.

K The chorion.

L. The same diffected off at the inferior part of the uterus, in order to show the head of

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the fætus through the amnios. N. B. This hint is taken from one of Dr Albinus's Tables of the gravid uterus.

M The placenta; the external convex furface of which, divided into a number of lober, is here represented, its concave internal parts

being covered by the chorion.

The placenta has been found adhering to all the different parts of the internal furface of the uterus, and fometimes even over the infide of the os uteri; this last manner of adhefion, however, always occasions floodings as foon as the same begins to dilate,

Tables VI. VIII. IX. X. show the internal surface of the placenta towards the secus, with the vessels composing its substance proceeding from the sunis, which is inserted in different placentas, into all the different parts

of the same, as well as in the middle.

The thirtieth and thirty-third Tables show the insertion of the sun into the abdomen of the fœtus.

With respect to the expulsion of the placenta when the membranes break, the uterus contracts as the waters are evacuated till it comes in contact with the body of the seetus: the same being delivered, the uterus grows much thicker, and contracts closely to the placenta and membranes, by which means they are gradually separated, and forced into the vagina. This shows that we ought to follow the method which nature teaches, waiting with patience, and allowing it to separate in a slow manner; which is much safer prac-

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tice, especially when the patient is weak; as the discharge is neither so great or sudden as when the placenta is hurried down in the too common method. But then we must not run into the other extreme, but assist when nature is not sufficient to expel the same.

Vide Vol. I. Book 3. Chap. 1. Sect. 4. Chap. 2. Sect. 2. 5. Vol. II. Coll. 14, 23.

THE TWELFTH TABLE,

Shows (in a lateral view and longitudinal division of the parts) the Gravid Uterus, when labour is somewhat advanced.

A The lowest vertebra of the back.

B the fcrebiculus cordis; the distance from which to the last-mentioned vertebra is here shown by dotted lines; as also part of the region below the diaphragm.

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C.C The usual thickness and figure of the uterus when extended with the waters at the

latter end of pregnancy.

D The same contracted and grown thicker

after the waters are evacuated.

E.E. The figure of the uterus when pendulous. In this case, if the membranes break when the patient is in an erect position, the head of the fætus runs a risk of sliding over and above the offa pubis, whence the shoulders will be pushed into the pelvis.

F.F The figure of the uterus when stretched higher than usual, which generally occasions vomitings

vomitings and difficulty of breathing. Confult on this subject Mr Leveret sur le Mechanisme de differentes Grossess.

G The os pubis of the left fide.

H.H The os internum.

I The vagina.

K The left nympha.

L The labium pudendi of the same side.

M The remaining portion of the bladder.

N The anus.

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ned ons ngs O.P The left hip and thigh,

In this period of labour the os uteri being more and more stretched by the membranes pushing down and beginning to extend the vagina, a great quantity of water is forced down at the same time, and (if the membranes break) is discharged; whence the uterus contracts itself nearer to the body of the fœtus, which is here represented in a natural position, with the vertex resting at the superior part of the offa pubis, and the forehead towards the right os ilium. As foon as the uterus is in contact with the body of the fœtus, the head of the fame is forced backward towards the os facrum from the line of the abdomen B.G intothat of the pelvis, viz. from the uppermost F to near the end of the coccyx, and is gradually pushed lower, as in the following Table.

If the membranes do not break immediately upon the their being pushed into the vagina, they should be allowed to protrude still fur-

ther in order to dilate the os externum.

Vide Vol. I. Book 1. Chap. 2. Sect. 2. Chap.

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3. Sect. 2. Book 2. Chap. 1. Sect. 1. 2. 4. Chap. 2. Sect. 2. Chap. 3. Sect. 4. No 5. Vol. II. Coll. 10. Nº 4. Cafe 3, 4. Coll. 14. Vol. III. Coll. 34. Nº 2. Cafe 4.

THE THIRTEENTH TABLE,

In the same view and section of the parts as in Table VI. shows the natural position of the head of the feetus when funk down into the middle of the pelvis after the os internum is fully opened, a large quantity of the waters being protruded with the membranes through the os externum, but prevented from being all discharged, from the head's filling up the vagina.

A The uterus a little contracted, and thicker, from fome of the waters being funk down before the child, or discharged.

B.B The superior parts of the offa ihum.

C The inferior part of the rectum.

D.D The vagina largely stretched with the head of the fœtus.

E.E The os internum fully opened.

F. A portion of the placenta.

G.G The membranes.

H.H The ligamenta lata.

LI The ligamenta rotunda. Both these last stretched upwards with the uterus.

THE vertex of the fœtus being now down at the inferior part of the right os ischium, and the wide part of the head at the narrow and

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and inferior part of the pelvis, the forehead by the force of the pains is gradually moved backwards; and as it advances lower, the vertex and occiput turn out below the pubes, as in the next Table. Hence may be learned of what consequence it is to know, that it is wider from side to side at the brim of the pelvis, than from the back to the fore part; and that it is wider from the fore to the hind head of the child, than from ear to ear.

Vide Vol. I. Book 1. Chap. 1. Sect. 3. 5. Also Book 3. Chap. 3. Sect. 3. 4. N° 3. Vol. II.

Coll. 14.

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THE FOURTEENTH TABLE,

In a fimilar view and fection of the parts with Table XII. shows the forehead of the fcetus turned (in its progression downwards, from its polition in the former Table) backwards to to the os facrum, and the occiput below the pubes; by which means the narrow part of the head is to the narrow part of the pelvis, that is, between the inferior parts of the offa ischium. Hence it may be observed, that though the distance betwen the inferior parts of the last-mentioned bones is much the fame as between the coccyx and pubes; yet as the cavity of the pelvis is much shallower at the anterior than lateral part, the occiput of the fœtus, when come down to the inferior part of either os ischium, turns out below the pubes: this answers the same end as if the pelvis itself had been been wider from the posterior part than from fide to side; the head likewise enlarging the cavity by forcing back the coccyx, and pushing out the external parts in form of a large tumour, as is more fully described in the following Table.

Vide Vol. I. II. as referred to in the prece-

ding Table.

A The uterus contracted closely to the fatus after the waters are evacuated.

B.C.D The vertebra of the loins, os facrum,

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and coccyx.

E The anus.

F The left hip.

G The perinaum.

H The os externum beginning to dilate.

I The os pubis of the left fide.

K The remaining portion of the bladder.

L The posterior part of the os uteri.

N. B. Although for the most part, at or before this period, the waters are evacuated, yet it often happens, that more or less will be retained, and not all discharged, till after the delivery of the child; occasioned from the presenting part of the sectus coming into close contact with the lower or under part of the uterus, vagina, or os externum, immediately or soon after the membranes break.

THE FIFTEENTH TABLE,

Is intended principally to show in what manner the perinceum and external parts are stretched by the head of the fœtus in a first pregnancy, towards the end of labour.

A The abdomen.

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B The labia pudendi.

C The cliteris and its praputium.

D The hairy scalp of the fatus swelled at the vertex, in a laborious case, and protruded to the os externum.

E.F The perineum and anus pushed out by the head of the fœtus in form of a large tumour.

G.G The parts that cover the tuberosities of the offa ischium.

H The part that covers the os coccygis.

THE perinaum in this figure is stretched two inches, or double its length in the natural state; but when the os externum is so much dilated by the head of the fœtus as to allow the delivery of the fame, the perinæum is generally stretched to the length of three, and fometimes four, inches. The anus is likewife lengthened an inch, the parts also between it and the coccyx being much distended. All this ought to caution the young practitioner never to precipitate the delivery at this time, but to wait and allow the parts to dilate in a flow manner; as, from the violence of the labour-pains, the fudden delivery of the head of the fœtus might endanger the laceration of the parts. The palm of the operator's hand ought therefore to be preffed against the perinæum, that the head may be prevented from passing till the os externum is sufficiently dilated, to allow its delivery, without tearing the frænum and parts betwixt that and the anus, which are at this time very thin.

Vide Vol. I. Book 3. Chap. 2. Sect. 2. Chap. 3. Sect. 4. No 1. and Book 4. Chap. 1. Sect. 1. Also Vol. II. Coll. 14, 24. Vol. III. Coll. 40.

THE SIXTEENTH TABLE,

And the three following, show in what manner the head of the fœtus is helped along with the forceps as artificial hands, when it is necessary to assist with the same for the safety of either mother or child. In this Table the hand is represented as forced down into the pelvis by the labour-pains, from its former position in Table XII.

A.A.B.C The vertebræ of the loins, os faerum, and coccyx.

D The os pubis of the left fide.

E The remaining part of the bladder.

F.F The intestinum rectum.

G.G.G The uterus.

H The mons veneris.

I The clitoris, with the left nympha.

X The corpus convernosum clitoridis.

V The meatus urinarius.

K The left labium pudendi.

L The anus.

N The perinaum.

Q.P The left hip and thigh.

R The skin and muscular part of the loins.

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THE patient in this case may be, as in this Table, on her fide, with her breech a little over the fide or foot of the bed, her knees being likewise pulled up to her belly, and a pillow placed between them, care being taken at the fame time that the parts are by a proper covering defended from the external air. If the hairy scalp of the fœtus is so swelled that the fituation of the head cannot be diftinguished by the futures, as in Table XXI. or if, by introducing a finger between the head of the child and the pubes or groins, the ear or backpart of the neck cannot be felt, the os externum must be gradually dilated in the time of the pains with the operator's fingers (previoully lubricated with hog's-lard) till the whole hand can be introduced into the vagina and flipped up in a flattish form between the posterior part of the pelvis and child's head. This last then is to be raised up as high as possible, to allow room for the fingers to reach the ear and posterior part of the neck. When the position of the head is known, the operator must withdraw his hand, and wait to fee if the stretching of the parts will renew or increase the labour-pains, and allow more space for the advancement of the head in the pelvis. If this, however, proves of no effect, the fingers are again to be introduced as before, and one of the blades of the forceps (lubricated with lard) is then to be applied along the infide of the hand or fingers and left ear of the child, as represented in the Table. But if the pelvis is distorted, and projects forward at

the superior part of the os facrum, and the forehead therefore cannot be moved a little backwards, in order to turn the ear from that part of the pelvis which prevents the end of the for. ceps to pass the same; in that case, I say, the blade must be introduced along the posterior part of the ear at the fide of the distorted bone. The hand that was introduced is then to be withdrawn, and the handle of the introduced blade held with it as far back as the perinæum will allow, whilft the fingers of the other hand are introduced to the os uteri, at the pubes or right groin, and the other blade placed exactly opposite to the former. This done, the handles being taken hold of and joined together, the head is to be pulled lower and lower every pain, till the vertex, as in this Table, is brought down to the inferior part of the left ischium or below the same. The wide part of the head being now advanced to the narrow part of the pelvis betwixt the tuberofities of the offa ifchium, it is to be turned from the left ischium out below the pubes and the forehead backwards to the concave part of the os facrum and coccyx, as in Table XVII. and afterwards the head brought along and delivered as in Table XVIII. and XIX. But if it is found that the delivery will require a confiderable degree of force from the head's being large or the pelvis narrow, the handles of the forceps are to be tied together with a fillet, as represented in this Table, to prevent their polition being changed, whilst the woman is turned on her back, as in Table XXIV. which

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that os i which is then more convenient for delivering the head than when lying on the fide.

This Table shows that the handles of the forceps ought to be held as far back as the os externum will allow, that the blades may be in an imaginary line between that and the middle space between the umbilicus and scrobiculus cordis. When the forceps are applied along the ears and sides of the head, they are nearer to one another, have a better hold, and mark less than when over the occipital and frontal bones.

Vide Vol. I. Book 3. Chap. 3. from Sect. 1. to 6. and Vol. II. Coll. 25, 26, 27, and 29.

THE SEVENTEENTH TABLE,

In the same view with the former, represents in outlines the head of the Fætus brought lower with the forceps, and turned from the position in the former Table, in imitation of the natural progression by the labour-pains, which may likewise be supposed to have made this turn before it was necessary to assist with the Forceps, this necessary at last arising from many of the causes mentioned in Vol. 1.

In this view the position of the forceps along the ears and narrow part of the head is more particularly expressed. It appears also, that when the vertex is turned from the lest os ischium, where it was closely confined, it is

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difengaged by coming out below the pubes, and the forehead that was pressed against the middle of the right os ischium is turned into the concavity of the os facrum and coccyx. By this means the narrow part of the head is now between the offa ischium or narrow part of the pelvis; and as the occiput comes out below the pubes, the head passes still easier along. When the head is advanced fo low in the pelvis, if the polition cannot be diffinguished by the futures, it may for the most part be known by feeling for the back-part of the neck of the fœtus, with a finger introduced betwixt the occiput and pubes, or towards one of the groins. If the head is squeezed into a longish form, as in Table XXI. and has been detained many hours in this position, the pains not being fufficient to complete the delivery, the affiltance of the forceps must be taken to fave the child, though the woman may be in no danger. But if the head is high up in the pelvis as in the former Table, the forceps ought not to be used except in the most urgent necessity.

This Table also shows that the handles of the forceps are still to be kept back to the perinæum, and when in this position are in a line with the upper part of the facrum, and is held more backwards, when the head is a little higher, would be in a line with the scrobiculis cordis. If the forceps are applied when the head is in this position, they are more easily introduced when the patient is in a supine position, as in Table XXIV. Neither

is it necessary to tie the handles, which is only done to prevent their alteration when turning the woman from her fide to her back.

As I have had feveral cases where a longer fort of forceps that are curved upwards are of great use to help along the head when the body is delivered first, as in Table XXXV. the same are represented here by dotted lines. They may be used in laborious cases as well as the others, but are not managed with the fame eafe.

Most of the parts of this Table being marked with the same letters as the former, the descriptions there given will answer in this, except the following. assist pain Propositi ally

L.M The anus.

AT ES SOUTHERN PROPERTY. M.N The perinaum.

O The common integuments of the abdomen.

R The short forceps. The state of the state of

S The long curved forceps. The first of these is eleven inches long, and the last twelve inches and a half, which I have after feveral alterations found fufficient; but this need not confine others who may choose to alter them

Vide Table XXXVII. or adville tot sigmex;

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THE EIGHTEENTH TABLE,

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In the same view and section of the parts, shows the head of the Fatus in the same position, but brought lower down with the forceps

forceps than in the former Table; for in this the Os Externum is more open, the Occiput comes lower down from below the Pubes, and the forehead past the Coccyx, by which both the Anus and Perinaum are stretched out in form of a large tumour, as in Table XV.

WHEN the head is fo far advanced, the operator ought to extract with great caution, left the parts should be torn. If the labourpains are fufficient, the forehead may be kept down and helped along in a flow manner by pressing against it with the fingers on the external parts below the coccyx: at the fame time the forceps being taken off, the head may be allowed to stretch the os externum more and more in a gradual manner, from the force of the labour-pains as well as affiftance of the fingers. But if the former are weak and infufficient, the affiftance of the forceps must be continued. (Vide the description of the parts in Table XVI.) S.T, in this, represent the left fide of the os uteri. The dotted lines demonstrate the situation of the bones of the pelvis on the right fide, and may ferve as an example for all the views of the fame.

a.b.c.h The outlines of the os ilium. D.e.f The same of the pubis and ischium. i.i.k The acetabulum. And m.n The foramen magnum.

Vide Vol. I. Book 3. Chap. 5. Sect. 3. Vol. II. Coll. 25. avol 13vel Maurid and avoidant

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THE NINETEENTH TABLE,

In the same view and section of the pelvis, is intended by outlines to show, that as the external parts are stretched, and the os externum is dilated, the occiput of the sectus rises up with a semicircular turn from out below the pubes, the under part of which-bones are as an axis or sulcrum, on which the back part of the neck turns, whilst at the same time the forehead and sace, in their turn upwards, distend largely the parts between the coccyx and os externum. This is the method observed by nature in stretching these parts in labour; and as nature is always to be imitated, the same method ought to be followed when it is necessary to help along the head with the forceps.

Vide the three former Tables for the descriptions and references.

THE TWENTIETH TABLE,

In the fame fection of the parts, but with a view of the right fide, shows the head of the Fatus in the contrary position to the three last figures, the Vertex being here in the concavity of the Sacrum, and the forehead turned to the Pubes.

A.B The vertebræ of the loins, or facrum, and coccyn.

C

C The os pubis of the right fide.

D The anus.

E The os externum not yet begun to stretch.

F The nympha.

G The labium pudendi of the right fide.

H The hip and thigh.

I.I. The uterus contracted, the waters being all discharged.

When the head is fmall, and the pelvis large, the parietal bones and the forehead will in this case, as they are forced downwards by the labour pains, gradually dilate the os externum, and stretch the parts between that and the coccyx in form of a large tumour, as in Table XV. till the face comes down below the pubes, when the head will be safely delivered. But if the same be large, and the pelvis narrow, the difficulty will be greater, and the child in danger; as in the tollowing Table.

Vide Vol. I. Book 3. Chap. 3. Sect. 4. No 3. Vol. II. Coll. 16. No 2.

THE TWENTY-FIRST TABLE,

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Shows the head of the Fætus in the same pofition as in the former Table; but, being much larger, it is by strong labour-pains squeezed into a longish form with a tumour on the Vertex, from the long compression of the head in the Pelvis. If the child cannot be delivered with the labour-pains, or turned turned and brought footling, the forceps are to de applied on the head as described in this figure, and brought along as it prefents; but if that cannot be done without running the risk of tearing the Perinæum, and even the Vagina and Rectum of the woman, the Forehead must be turned backwards to the Sacrum. To do this more effectually, the operator must grasp firmly with both hands the handles of the forceps, and at the same time pushing upwards raife the head as high as possible, in order to turn the forehead to one fide, by which it is brought into the natural position; this done, the head may be brought down and delivered as in Table XVI. &c.

Vide Vol. I. Book 3. Chap. 3. Sect. 4. No 2. and Vol. II. Coll. 28. Also the former Table for the description of the parts, except

K The tumour on the vertex. The fame compression and elongation of the head as well as the tumour on the vertex, may be supposed to happen in a greater or less degree in the XVI. XVI. XVIII. XIX. Tables, as well as in this, where the difficulty proceeds from the head being large or the pelvis narrow. Vide Tables XXVII. and XXVIII.

L The forceps. Sometimes the forehead may be moved to the natural position by the assistance of the fingers or only one blade of the forceps. The forceps may either be the straight kind, or such as are curved to one

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or ed fide, when it is necessary to use one or both blades.

M The vesica urinaria much distended with a large quantity of urine from the long pressure of the head against the urethra; which shows that the urine ought to be drawn off with a catheter, in such extraordinary cases, before you apply the forceps, or in preternatural cases where the child is brought footling.

N The under-part of the uterus.

O.O The os uteri.

THE TWENTY SECOND TABLE,

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Shows, in a front view of the parts, the Forehead of the Fætus presenting at the Brim of the Pelvis, the Face being turned to one side, the Fontanel to the other, and the Feet and Breech stretched towards the Fundus Uteri.

A.A The superior part of the offa ilium.

B The anus. 12 hours gold out decidences

C. The perinaum.

D The os externum; the thickness of the posterior part before it is stretched with the head of the child.

E.E.E The vagina? It is sould have have

F The os uteri not yet fully dilated.

G.G.G The uterus.

H The membrana adipofa.

Is the face is not forced down, the head will fometimes come along in this manner; in which case the vertex will be flattened, and the forehead raised in a conical form; and when

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the head comes down to the lower part of the pelvis, the face or occiput will be turned from the side, and come out below the pubes. But if the head is large, and cannot be delivered by the pains, or if the wrong position cannot be altered, the child must, if possible, be brought footling, or delivered with the forceps.

Vide Vol. I. Book. III. Chap. 2. Sect. 3. Chap. 3. Sect. 4. N° 3. Vol. II. Coll. 16. N° 4.

Coll. 28.

THE TWENTY-THIRD TABLE,

Shows, in a lateral view, the face of the child presenting, and forced down into the lower part of the Pelvis, the chin being below the Pubes, and the Vertex in the concavity of the Os Sacrum: the waters likewise being all discharged, the Uterus appears closely joined to the body of the child, round the neck of which is one circumvolution of the Funis.

A.B The vertebræ of the loins, os facrum, and coccyx.

C The os pubis of the left fide.

D The inferior part of the rectum.

E The perinaum.

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F The left labium pudendi.

G.G.G The uterus.

WHEN the pelvis is large, the head, if small, will come along in this position, and the child be faved: for as the head advances lower, the face and forehead will stretch the parts between the

fide, when it is necessary to use one or both blades.

M The vesica urinaria much distended with a large quantity of urine from the long pressure of the head against the urethra; which shows that the urine ought to be drawn off with a catheter, in such extraordinary cases, before you apply the forceps, or in preternatural cases where the child is brought footling.

N The under-part of the uterus.

O.O The os uteri.

THE TWENTY SECOND TABLE,

Shows, in a front view of the parts, the Forehead of the Fætus presenting at the Brim of the Pelvis, the Face being turned to one side, the Fontanel to the other, and the Feet and Breech stretched towards the Fundus Uteri.

A.A The superior part of the offa ilium.

B The anus. Is not a good our dodo and

C. The perinaum.

D The os externum; the thickness of the posterior part before it is stretched with the head of the child.

E.E.E The vagina? do south and do se

F The os uteri not yet fully dilated.

G.G.G The uterus.

H The membrana adipofa.

Is the face is not forced down, the head will fometimes come along in this manner; in which case the vertex will be flattened, and the forehead raised in a conical form; and when

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the head comes down to the lower part of the pelvis, the face or occiput will be turned from the fide, and come out below the pubes. But if the head is large, and cannot be delivered by the pains, or if the wrong position cannot be altered, the child must, if possible, be brought footling, or delivered with the forceps.

Vide Vol. I. Book. III. Chap. 2. Sect. 3. Chap. 3. Sect. 4. N° 3. Vol. II. Coll. 16. N° 4.

Coll. 28.

THE TWENTY-THIRD TABLE,

Shows, in a lateral view, the face of the child presenting, and forced down into the lower part of the Pelvis, the chin being below the Pubes, and the Vertex in the concavity of the Os Sacrum: the waters likewise being all discharged, the Uterus appears closely joined to the body of the child, round the neck of which is one circumvolution of the Funis.

A.B The vertebræ of the loins, os facrum, and coccyx.

C The os pubis of the left fide.

D The inferior part of the rectum.

E The perinaum.

F The left labium pudendi.

G.G.G The uterus.

WHEN the pelvis is large, the head, if small, will come along in this position, and the child be saved: for as the head advances lower, the face and forehead will stretch the parts between

the frænum labiorum and coccyx in form of a large tumour. As the os externum likewife is dilated, the face will be forced through it: the under part of the chin will rife upwards over the anterior part of the pubes; and the forehead, vertex, and occiput, turn up from the parts below. If the head, however, is large, it will be detained either when higher or in this position. In this case, if the position cannot be altered to the natural, the child ought to be turned, and delivered footling. If the pelvis, however, is narrow, and the waters not all gone, the vertex should, if possible, be brought to prefent; but if the uterus is fo closely contracted that this cannot be effected, on account of the strong pressure of the fame and flipperiness of the child's head, in this case the method directed in the following Table is to be taken.

THE TWENTY-FOURTH TABLE.

Represents, in the lateral view, the Head of the Fætus in the same position as in the former table; but the delivery is supposed to be retarded from the largeness of the Head, or a narrow Pelvis.

In this case, if the head cannot be raised, and pushed up into the uterus, it ought to be delivered with the forceps in order to fave the child. This position of the chin to the pubes is one of the fafest cases where the face prefents, and is most easily delivered with the

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forceps, the manner of introducing of which over the ears is shown in this Table. The patient must lie on her back, with her breech a little over the bed, her legs and thighs being supported by an affistant fitting on each fide. After the parts have been flowly dilated with the hand of the operator, and the forceps introduced, and properly fixed along the ears of the child, the head is to be brought down by degrees, that the parts below the os externum may be gradually stretched: the whilft the forehead, fontanel, and occiput, are brought out flowly from the perinæum and fundament, to prevent the fame from being hurt or lacerated. But if the fœtus can neither be turned nor extracted with the forceps, the delivery must be left to the labourpains, as long as the patient is in no danger; but if danger is apparent, the head must be delivered with the curved crotchets. Table XXXIX.

When the face presents, and the chin is to the side of the pelvis, the patient must lie on her side; and after the forceps are fixed along the ears, the chin is to be brought down to the os ischium, and then turned out below the pubes, and delivered in a slow manner as above.

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THE TWENTY-FIFTH TABLE,

Shows, in a lateral view of the right fide, the Face of the Factus presenting, as in Table XXIII. but in the contrary position; that is, with the Chin to the Os Sacrum, and the Bregma to the Pubes, the waters evacuated, and the Uterus contracted.

A The os externum not yet begun to stretch. B The anus. Vide Table XX. for the further description of the parts.

In fuch cases, as well as in those of the last-mentioned Table, if the child is small, the head will be pushed lower with the labourpains, and gradually stretch the lower part of the vagina and the external parts; by which means the os externum will be more and more dilated, till the vertex comes out below the pubes, and rifes up on the outlide; in which case the delivery is then the same as in natural labours. But if the head is large, it will pass along with great difficulty; whence the brain and veffels of the neck will be fo much compressed and obstructed as to destroy the child. To prevent which, if called in time, before the head is far advanced in the pelvis, the child ought to be turned and brought footling. If the head, however, is low down, and cannot be turned, the delivery is then to be performed with the forceps, either by bringing along the head as it prefents, or

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as in the following Table. See the references in the preceding Table.

THE TWENTY-SIXTH TABLE,

Represents by out-lines, in a lateral view of the left fide of the subject, the Fætus in the same situation as in the former Table.

THE head here is squeezed into a very oblong form; and though forced down so as fully to dilate the os externum, yet the vertex and occiput cannot be brought so far down as to turn out from below the pubes (as in the foregoing Table), without tearing the perinæum and anus, as well as the vagina and rectum.

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The best method in this case, after either the short or long curved forceps have been applied along the ears (as represented in the Table), is to push the head as high up in the pelvis as is possible; after which the chin is to be turned from the os facrum to either os ischium, and afterwards brought down to the inferior part of the last mentioned bone. This done, the operator must pull the forceps with one hand, whilft two fingers of the other are fixed on the lower part of the chin or underjaw, to keep the face in the middle, and prevent the chin from being detained at the os fichium as it comes along; and in this manner move the chin round with the forceps and the above fingers till brought under the Vol. I. pubes:

pubes; which done, the head will be eafily

extracted, as in Table XXIV.

If, before affistance has been called, the head is so squeezed down into the pelvis, that it is impossible to move the chin from the facrum to either os ischium, so as to deliver with the forceps, for the safety of the child, the operator must wait with patience as long as the woman is not in danger, or there is no certainty of the death of the sætus: but if the patient runs the least risk, the head must be be delivered with the crotchet.

In general, with respect to the posture of the woman in the application of the forceps, when the ears are to the sides of the pelvis, the forceps, as was observed in Table XXIV. are most easily introduced when the patient lies upon her back, and her breech over the side of the bed; but when the ear is to the pubes or groin, they are better applied when the patient lies on her side, as was observed in the cases where the vertex presented.

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Vide Table XXIV. for the description of the parts, and the references. Also Table XXXIX. for the manner of using the crotchet.

THE TWENTY-SEVENTH TABLE

Gives a lateral internal view of a distorted Pelvis, divided longitudinally, with the Head of a Fætus of the seventh month passing

fing the same. Vide the explanation of Table III.

A.B.C The os facrum and coccyx.

D The os pubis of the left fide.

E The tuberosity of the as ischium of the same side.

THE head of the fœtus here, though small, is with difficulty squeezed down into the pelvis, and changed from a round to an oblong form before it can pass, there being only the space of two inches and one quarter between the projection of the superior part of the sacrum and ossa pubis. If the head is soon delivered, the child may be born alive; but if it continues in this manner many hours, it is in danger of being lost, on account of the long pressure upon the brain. To prevent which, if the labour-pains are not sufficiently strong, the head may be helped along with the forceps, as directed in Table XVI.

This figure may ferve as an example of the extreme degree of distortion of the pelvis, between which and the well-formed one are many intermediate degrees, according to which the difficulty of delivery must increase or diminish, as well as from the disproportion of the pelvis and head of the setus; all which cases require the greatest caution, both as to the management and safety of the mother and

child.

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Vide Vol. I. Book III. Chap. 2. Sect. 3. N° 5. Chap. III. Sect. 4. N° 3. Vol. II. Coll. 21. N° 1. and Coll. 29.

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THE TWENTY-EIGHT TABLE.

Gives a fide-view of a distorted Pelvis, as in the former Table, with the Head of a full-grown Fætus squeezed into the Brim, the Parietal Bones decussating each other, and compressed into a conical form.

A.B.C. The os facrum and coccyx.

D The os pubis of the left fide.

E The tuberofity of the os ischium.

F The processus acutus.

G The foramen magnum.

This Table shows the impossibility in such a case to save the child, unless by the Cæsarean operation; which, however, ought never to be performed, excepting when it is impracticable to deliver at all by any other method. Even in this case, after the upper part of the head is diminished in bulk, and the bones are extracted, the greatest force must be applied in order to extract the bones of the face and basis of the skull, as well as the body of the sœtus.

Vide Vol. I. Book III. Chap. 3. Sect. 7. Chap. 5. Sect. 3. and Vol. III. Coll. 31, 39.

THE TWENTY-NINTH TABLE,

Represents, in a front view of the Pelvis, as in

in Table XXII. the Breech of the Fatus presenting, and dilating the Os Internum, the Membranes being too soon broke. The fore parts of the Child are to the posterior part of the Uterus; and the Funis with a knot upon it surrounds the neck, arm, and body.

Some time after this and the following tables were engraved, Dr Kelly showed me a subject he had opened, where the breech presented itself, and lay much in the same position with its body as in the ninth table, supposing the breech in that figure turned down to the pelvis, and the head up to the fundus uteri.

I have fometimes felt in these cases, (when labour was begun, and before the breech was advanced into the pelvis), one hip at the facrum, the other resting above the os pubis, and the private parts to one side: but before they could advance lower, the nates were turned to the sides and wide part of the brim of the pelvis, with the private parts to the facrum, as in this table; though sometimes to the pubes, as in the following table. As soon as the breech advances to the lower part of the basin, the hips again return to their former position, viz. one hip turned out below the os pubis, and the other at the back-parts of the os externum.

N. B. In this case the child, if not very large, or the pelvis narrow, may be often delivered alive by the labour-pains; but if long

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detained at the inferior part of the pelvis, the long pressure of the funis may obstruct the circulation. In most cases where the breech presents, the effect of the labour-pains ought to be waited for, till at least they have fully dilated the os internum and vagina, if the fame have not been stretched before with the waters and membranes. In the mean time, whilst the breech advances, the os externum may be dilated gently during every pain, to allow room for introducing a finger or two of each hand to the outfide of each groin of the fœtus, in order to affift the delivery when the nates are advanced to the lower part of the vagina. But if the fœtus is larger than usual, or the pelvis narrow, and after a long time and many repeated pains the breech is not forced down into the pelvis, the patient's strength at the same time failing, the operator must in a gradual manner open the parts, and, having introduced a hand into the vagina, raise or push up the breech of the fœtus, and bring down the legs and thighs. If the uterus is so strongly contracted that the legs cannot be got down, the largest end of the blunt hook is to be introduced, as directed in Table XXXVII. As foon as the breech or legs are brought down, the body and head are to be delivered, as described in the next table, only there is no necessity here to alter the pofition of the child's body.

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Vide Vol. I. Book III. Chap. 4. Sect. 1, 2.

Vol. III. Coll. 32.

The description of the parts in this and the following

following Table is the same as in Table XXII. only the dotted lines in this describe the place of the offa pubis, and anterior parts of the offa ischium which are removed, and may serve in this respect as an example for all the other front-views, where, without disfiguring the Table, they could not be so well put in.

THE THIRTIETH TABLE

Shows, in the fame view and with the fame references as the former, the breech of the fœtus presenting; with this difference, however, that the fore-parts of the child are to the fore-part of the uterus. . In this case, when the breech coming double as it prefents is brought down to the hams, the legs must be extracted, a cloth wrapped round them, and the fore-parts of the child turned to the back-parts of the woman. If a pain should in the mean time force down the body of the child, it ought to be pushed up again in turning, as it turns easier when the belly is in the pelvis, than when the breast and shoulders are engaged; and as sometimes the face and forehead are rather towards one of the groins, a quarter-turn more brings these parts to the fide of the pelvis, and a little backwards, after which the body is to be brought down. If the child is not large, the arms need not be brought down, and the head may be delivered by pressing back the thoulders and body of the child to the perinæum

næum, and, whilft the chin and face are within the vagina, to bring the occiput out from below the pubes, according to Daventer's method. Or the operator may introduce a finger or two into the mouth, or on each fide of the nofe, and, supporting the body on the fame arm, fix two fingers of the other hand over the shoulders, on each side of the child's neck, and in this manner raise the body over the pubes, and bring the face and forehead out with a femicircular turn upwards, from the under part of the os externum. All this may be eafily done when the woman lies on her fide; but if the child is large, and the pelvis narrow, it is better to turn the patient on her back, as described in Table XXIV, and, after the legs and body are extracted as far as the shoulders, the arms are to be cautiously brought down, and the head delivered. If the woman has strong pains, and when by the felt pulsation of the vessels of the funis umbilicalis. or the struggling motions of the feetus, it is certain that the child is still alive, wait with patience for the affiltance of the labour : but if that and the hand are infufficient, and the pulfation of the funis turns weaker, and if the child cannot be brought double, the breech must be pushed up; and if the resistance of the uterus is so great as to prevent the extraction of the legs, the patient ought to be turned on her knees and elbows. When the legs are thus brought down, the woman, if needful, is to be again turned to her back, to allow more freedom to deliver the body and head, as before

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fore described. If the head after several trials cannot be delivered, without endangering the child from overstraining the neck, the long curved forceps ought to be applied, as in Table XXXV. If these fail, and the patient is not in danger, some time may be allowed for the effect of the labour-pains; which likewise proving insufficient, the crotchet must be used as in Table XXXIX. and when it is certain that the child is dead, or that there is no possibility of saving it.

THE THIRTY-FIRST TABLE,

Represents, in a front view of the Pelvis, the Fætus compressed by the contraction of the Uterus into a round form, the fore-parts of the former being towards the inferior part of the latter, and one Foot and Hand fallen down into the Vagina. In this figure the anterior part of the Pelvis is removed by a longitudinal section through the middle of the Foramen Magnum.

A.A The superior parts of the Offa ilium.

B.B The uterus.

C The mouth of the womb stretched, and appearing in

O.O.O.O The vagina.

D The inferior and posterior part of the os externum.

E.E.E.E The remaining part of the offa pu-

F.F.F. The membrana adipofa.

This and the three following tables, representing four different preternatural positions of the fœtus in utero, may serve as examples for the manner of delivery in these as well as in

all other preternatural cases.

In all preternatural cases, the setus may be easily turned and delivered by the seet, if known before the membranes are broke and the waters discharged; or if the pelvis is narrow, and the patient is strong, the head, if large, may be brought down so as to present in the natural way: but if all the waters are discharged, and the uterus is strongly contracted to the body of the seetus, this last method can seldom take place, on account of the strong pressure of the uterus and slipperiness of the child's head.

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In the present case, the woman may either be laid on her back or fide, as described in Tables XVI. and XXIV. and the operator, having flowly dilated the os externum with his fingers, must introduce the same into the vagina, and push up into the uterus the parts of the fœtus that present; or if there is space for it, his hand may pass in order to dilate the os internum, if not fufficiently stretched previously by the membranes and waters. This done, he must advance his hand into the uterus, to know the position of the fœtus; and, as the breech is rather lower than the head, fearch for the other leg, and bring down both feet without the os externum. A cloth must then be wrapped round them; and, having grafped

them with one hand, he is to introduce the other into the uterus, in order to raife the head of the fœtus, whilft the legs and thighs are pulled down by the hand that holds the feet. When the head is raised, and does not fall down again, the hand of the operator may be withdrawn from the uterus, and the delivery completed as directed in the two former Tables. By the artless method of taking hold and pulling one or both feet, the breech may come down and the head rife to the fundus; but if this should not happen, there will be great danger of overstraining the fœtus, which is prevented by the former method. If the membranes are broken before the os uteri is largely opened, and the hand of the operator cannot be introduced, which fometimes happens in a first pregnancy, the parts of the fœtus should be allowed to protrude still further. by which means the rigidity of the os internum will in time be lessened.

Vide Vol. I. and III. on preternatural labours.

THE THIRTY-SECOND TABLE

Represents, in the same view with the former, the Fatus in the contrary Position; the Breech and Fore-parts being towards the Fundus Uteri, the lest Arm in the Vagina, and fore Arm without the Os Externum, the shoulder being likewise forced into the Os Uteri.

THE operator in this case must introduce his fingers between the back part of the vagina and the arm of the fœtus in order to raise the shoulder and make room for pressing his hand into the uterus to diffinguish the position. This being known, he ought to push up the shoulder to that part of the uterus where the head is lodged, in order to raife the fame to the fundus. If the body of the fœtus does not move round, and thereby lie in a more convenient position for bringing down the legs, the hand of the operator ought to be pushed up still higher to fearch for and take hold of the feet, which are to be brought down as far as is possible. If this should not change the position, the shoulder is to be pushed up, and the legs pulled down, alternately, till they are brought down into the vagina, or without the os externum; after which the delivery may be completed, as in the former case.

If the feet cannot be brought down lower than into the vagina, a noofe may be introduced over both ankles, by which the legs are brought lower by pulling the noofe with one hand, whilft the other, previously introduced into the uterus, pushes up the shoulders and head. By this double force the position of the setus is to be altered, and the delivery effected. In these cases, as the shoulder is raised to the fundus, the arm commonly returns into the uterus; but if the arm is so swelled as to prevent the introduction of the operator's hand, and cannot be solded up or returned into the uterus, it must be taken off at the shoulder

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shoulder or elbow, in order to deliver and fave the woman. If both the arms come down when the breast presents, the methods above described are to be used.

Vide the explanations and references of the foregoing Table.

THE THIRTY-THIRD TABLE

Exhibits, in the same view likewise of the Pelvis with the former, a third position of the Fatus when compressed into the round form; the Belly, viz. or Umbilical Region, presenting at the Os Internum, and the Funis fallen down into the Vagina, and appearing at the Os Externum.

THE delivery in this case is to be effected as in the former table, by pushing up the breast and bringing down the legs. When the belly presents, it is easier coming at the legs than when the breast presents, because in the former case the head is nearer to the fundus uteri, and the legs and thighs lower. If the belly or breast is forced down into the lower part of the pelvis, the child will be in danger from the bending of the vertebræ and the pressure of the spinal marrow. So great force is also required to raise these parts up into the uterus, in order to come at the feet, that it will fometimes be necessary to turn the woman to her knees and elbows to diminish the refistance of the abdominal muscles. When the funis comes down without the os exter-VOL. I. num.

num, if there is a pulsation felt, it must immediately be replaced and kept warm in the vagina, to preferve the circulation, and prevent a stagnation from its being exposed to the cold air. If the funis comes down when the head prefents, the child is in danger, if not speedily delivered with the pains, or brought footling.

See explanations the two former Tables.

THE THIRTY-FOURTH TABLE,

Shows, in a lateral view of the Pelvis, one of the most difficult preternatural cases. The left shoulder, breast, and neck of the Fætus presenting, the Head reflected over the Pubes to the right shoulder and back, and the feet and breech stretched up to the Fundus, the Uterus contracted at the fame time in form of a long fheath round the body of the Fætus.

A.B.C The os facrum and coccyx.

D The os pubis of the left fide.

E Part of the urinary bladder.

F The rectum.

H.I.K The private parts.

M The anus.

M.N The perinaum.

V The meatus urinarius.

O The os uteri, not yet opened, and fituated backwards towards the rectum and coccyx.

R.S The fame represented in dotted lines,

as opened when the labour is begun.

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T.U The same more fully dilated, but nearer to the posterior than anterior part of

the pelvis.

W.P The same not fully stretched at the fore-part, though entirely obliterated at the back-part, the uterus and vagina being there only sometimes one continued surface.

Hence it appears why the anterior part of the os uteri is frequently protruded before the head of the fatus at the pubes, which, if it retards delivery, is removed by sliding it up with a finger or two between the head and last mentioned part. Vide Tables IX. X. XI. XII. XIII.

The manner of delivery in the position of the fœtus as represented in this Table, is to endeavour with the hand to force up the part presenting in order to raise the head to the fundus. If this is impossible from the strong contraction of the uterus, the operator must push up his hand in a flow and cautious manner along the breast and belly of the child, in order to come at the legs and feet, which are to be taken hold of, and brought as far down as the position of the fœtus will admit of. The body is then to be moved round, by pushing up the lower parts and pulling down the upper, till the feet are brought without the os externum, and the delivery completed as in Table XXXI. But if the feet cannot be got down so as to be taken hold of without the os externum, a noofe must be fixed over the ankles, as in Table XXXII.

Vide Vol. I. III. as directed in Table XXXI.

THE THIRTY FIFTH TABLE.

Shows, in a lateral view of the Pelvis, the method of affifting the Delivery of the Head of the Fatus with the long curved Forceps. in preternatural cases, when it cannot be done with the hands as described in Tables XXIX. and XXX.

A The three lowest vertebra of the loins. with the os facrum and coccyx.

B The os pubis of the left side.

C.C The perinaum and anus pressed backwards with the forceps.

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D The intestines.

E.E The parietes of the abdomen.

F.F.F The uterus.

G The posterior part of the os uteri. CHARTEN COLOR CONTROL

H The reclum.

I The vagina.

AFTER the body and arms of the child are delivered, and the different methods used to bring down the head with the hands, as directed in the above Table, and more fully described in Vol. I. and III. the following method is to be tried in order to fave the child, who must otherwise be lost by overstraining the neck and spinal marrow. The woman being in the supine position, as in Table XXIV. one of the affiftants ought to hold the body and arms of the child up towards the abdomen of the woman, to give more room to the operator, who having introduced one hand

hand up to the child's face, and moved it from the fide a little backwards for the eafier application of the forceps along the fides of the head, must then turn his hand to one of the ears, and introduce one of the blades with the other hand between the fame and the head. with the curved fide towards the pubes, as in this Table. This done, the hand is to be brought down to hold the handle of the blade of the forceps till the other hand is introduced to the other fide of the head, by which means the same is pressed against the blade that is up, and which is thus prevented from flipping whilft the other hand introduces the fecond blade on the opposite side. The blades being thus introduced, care must be taken that, in joining them, no part of the vagina is locked in. After the forceps are firmly fixed along the fides of the head, the face and forehead. must be turned again to the side of the brim of the pelvis, by which means the wide part of the head is to the wide part of the brim. This done, the head is to be brought lower, and the force gradually increased according to the relistance from the largeness of the head or narrowness of the pelvis. The forehead, when brought low enough down, is then to be turned into the concavity of the os facrum and cocyx, the handles of the forceps raised upwards, and the same caution used in bringing the head through the os externum as defcribed in Table XIX, and XXX. By this method the head will be delivered, the child frequently faved, and the use of the crotchet pre-T 3 vented.

vented, except in those basins that are so narrow that it is impossible to deliver without diminishing the bulk of the head.

Vide Table XXXIX. Also Vol. I. Book 3.

Chap. 4. Sect. 5. Vol. III. Coll. 34, 35.

THE THIRTY-SIXTH TABLE,

Represents, in a lateral view of the Pelvis, the method of extracting, with the affistance of a curved crotchet, the Head of the Fætus, when left in the Uterus, after the Body is delivered and separated from it, either by its being too large, or the Pelvis too narrow.

A.B.C The os facrum and coccyx.

D The os pubis of the left fide.

E.E The uterus.

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F The locking part of the crotchet.

g.h.i The point of the crotchet on the infide of the cranium.

If this case happens from the forehead's being towards the pubes, or the child long dead, and so mortified that both the body and under jaw are separated unexpectedly, the long forceps that are curved upwards will be sufficient to extract the head; but if the same is large, and the pelvis narrow, and the delivery cannot be effected by the above method, then the head must be opened, that its bulk may diminish as it is extracted. The patient being placed either on her back or side, as in the explanation of Table XVI. and XXIV.

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the left-hand of the operator is to be introduced into the uterus, and the forehead of the fœtus turned to the right fide of the brim of the pelvis, and a little backwards, the chin being downwards; after which the palm of the hand and fingers are to be advanced as high as the fontanel, and the head grasped with the thumb and little finger on each fide, as firm as is possible, whilft an assistant presses on each fide of the abdomen with both hands. to keep the uterus firm in the middle and lower part of the fame. This done, the operator having with his right-hand introduced and applied the crotchet to the head, (the point being turned towards the forehead, and the convex fide towards the facrum), he must go up along the inside of the left-hand as high as the fontanel, and there, or near it, fix the point of the crotchet, keeping still the left-hand in the former polition, till with the other he pierces the cranium with the point of the instrument, and tears a large opening in it from K to I; after this, keeping the crotchet steady, he may slide down his left-hand in a cautious manner, lest the former position should be altered, and the head will fink lower down by the affiftant's preffing on the abdomen. The two fore-fingers of the lefthand are then to be introduced into the mouth, and the thumb below the under-jaw, the hand being above the blade of the crotehet. When this firm hold is taken, the operator may begin and pull flowly with both hands; and as the brain discharges through the perforation,

foration, the head will diminish and come along. If this method should fail from the slipperiness of the head, or its being so much offified that a fufficient opening cannot be made, the vertex must be turned down to the brim of the pelvis, the fontanel backwards. and each blade of the long forceps introduced along the fides of the head, with the curved fide towards the pubes. After they are joined and locked, the handles are to be tied together with a fillet, to keep them firm on the head; an affistant is to keep the handles backwards till the cranium is largely opened with the long fciffars shown in Table XXXIX. This done, the head is to be extracted in a flow manner, first turning the forehead to the fide of the brim; and as the brim evacuates, and the head comes lower down, again turning the forehead into the concavity of the facrum, and completing the delivery, as in Table XVI.

This Table may also serve for an example to show the method of fixing the crotchet on the head, when although the body is not separated from it, yet it cannot be delivered with the operator's hands or the long forceps, as in

Table XXIX. and XXXV.

Vide Vol. I. Book 3. Chap. 3. Sect. 7. Chap. 4. fect. 5. Alfo Vol. III. Coll. 31, 36.

THE THIRTY-SEVENTH TABLE,

And the two following, represent several kinds of Instruments useful in laborious and difficult Cases.

A The straight short forceps, in the exact proportion as to the width between the blades. and length from the points to the locking part: the first being two and the fecond fix inches, which with five inches and a half (the length of the handles), makes in all eleven inches and a half. The length of the handles may be altered at pleasure. I find, however, in practice, that this standard is the most convenient, and with less difficulty introduced than when longer, having also sufficient force to deliver in most cases where their affistance is neceffary. The handles and lowest part of the blades may, as here, be covered with any durable leather; but the blades ought to be wrapped round with fomething of a thinner kind, which may be eafily renewed when there is the least suspicion of venereal infection in a former case: by being thus covered, the forceps have a better hold, and mark less the head of the child. For their easier introduction, the blades ought likewise to be greafed with hog's-lard.

B represents the posterior part of a single blade, in order to show the open part of the same, and the form and proportions of the whole. The handles, however, as here re-

presented, are rather too large.

Vide Table XXI. for the figure and proportions of the long forceps, that are curved upwards, and covered in the same manner as the former.

The forceps were at first contrived to save the fœtus, and prevent as much as possible the use of sharp instruments; but even to this salutary method recourse ought not to be had but in cases where the degree of force requisite to extract will not endanger by its consequences the life of the mother. For, by the imprudent use of the forceps, much more harm may be done than good.

See the explanation of Table XVI. Also the Preface to Vol. II. with the Cases in the

Collection on that subject.

C The blunt hook; used for three purposes. First, To affift the extraction of the head after the cranium is opened with the scissars, by introducing the small end along the ear on the outside of the head to above the under-jaw, where the point is to be fixed; the other extremity of the hook being held with one hand, whilst two singers of the other are to be introduced into the foresaid opening, by which holds the head is to be gradually extracted.

Secondly, The small end is useful in abortions, in any of the first four or five months, to hook down the secundines when lying loose in the uterus, when the patient is much weakened by floodings from the too long retention of the same, the pains being also unable to expel them, and when they cannot be extracted with the singers. But if the placenta still adheres, it is dangerous to use this or any other instrument to extract the same, as it ought to be left till it separates naturally. If a small part of the secundines is protruded through the os uteri, and pulled away from what still adheres in the uterus, the mouth of

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the womb contracts, and that irritation is thereby removed which would have continued the pains, and have separated and discharged the whole.

Thirdly, The large hook at the other end is useful to affift the extraction of the body. when the breech prefents; but should be used with great caution, to avoid the diflocation or fracture of the thigh.

Vide Table XXIX. Alfo Vol. I. Book II. Chap. 2. Book III. Chap. 2. Sect. 7. and Chap. 4. Sect. 2. Vol. II. Coll. 12. Vol. III. Coll. 31, 32. 13 lander of the order from the state

estelled in the concoverance where there are

THE THIRTY-EIGHTH TABLE.

and the sale appointed by a light be-

a second tractor appropriate and ifoid the A REPRESENTS the whalebone-fillet, which may be fometimes useful in laborious cases, when the operator is not provided with the forceps in fudden and unexpected exigencies.

When the vertex of the fœtus presents, and the head is forced down into the lower part of the pelvis, the woman weak, and the pains not fufficient to deliver it, the double of the fillet is to be introduced along the fore-part of the parietal bones to the face, and, if possible, above the under-jaw; which done, the whalebone may be either left in or pulled down out of the sheath, and every weak pain assisted by pulling gently at the fillet. If the head can be raifed to the upper part of the pelvis, the fillet will be more cafily got over the chin, which

is a fafer and better hold than on the face. If the face or forehead prefents, the fillet is to be introduced over the occiput. Vide Vol. I. Book. 3. Chap. 3. Sect. 2. Vol. II. Coll. 24.

In such cases likewise the whalebone may be supplied by a twig of any tough wood, mounted with a limber garter or fillet sewed in form

of a long fleath. I hiers of moiture there die

B.B Gives two views of a new kind of peffary for the prolapfus uteri, being taken from the French and Dutch kind. After the uterus is reduced, the large end of the peffary is to be introduced into the vagina, and the os uteri retained in the concave part, where there are three holes to prevent the stagnation of any moisture. The small end without the os externum has two tapes drawn through the two holes, which are tied to four other tapes, that hang down from a belt that furrounds the woman's body, and by this means keep up the peffary. This fort may be taken out by the patient when she goes to bed, and introduced again in the morning; but as this fometimes rubs the os externum, fo as to make its use uneafy, the round kind marked Care of more general use. They are made of wood, ivory, or cork, (the last covered with cloth and dipr in wax): the peffary is to be lubricated with pomatum, the edge forced through the passage into the vagina, and a finger introduced into the hole in the middle lays it across within the os externum. They ought to be larger or smaller, according to the wideness or narrowness of the passage, to prevent their being forced out by

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by any extraordinary straining. Vide Vol. 1. Book IV. Chap. 1. Sect. 7. Vol. III. Coll. 24.

D.D Gives two views of a female catheter, to show its degree of curvature and different parts. Those for common use may be made much shorter, for conveniency of carrying in the pocket: but sometimes, when the head or body of the child presses on the bladder above the pubes, it requires one of this length; and in some extraordinary cases I have been obliged to use a male catheter.

Vide Vol. I. Book II. Chap. 1. Sed. 1, 2. Vol. II. Coll. 10. No 2.

THE THIRTY-NINTH TABLE.

a REPRESENTS a pair of curved crotchets locked together in the same manner as the forceps. It is very rare that the use of both is necessary, excepting when the face presents with the chin turned to the facrum, and when it is impossible to move the head to bring the child footling, or deliver with the forceps. In that case, if one crotchet is not sufficient, the other is to be introduced, and, when joined together, will act both as crotchets, in opening the cranium, and, as the head advances, will likewise act as forceps in moving and turning the head more conveniently for the delivery of the fame. They may also be useful to assist when the head is left in the uterus, and one blade is not sufficient. There is seldom occafion, however, for the sharp crotchet, when VOL. I. the

is a fafer and better hold than on the face. If the face or forehead prefents, the fillet is to be introduced over the occiput. Vide Vol. I. Book. 3. Chap. 3. Sect. 2. Vol. II. Coll. 24.

In fuch cases likewise the whalebone may be supplied by a twig of any tough wood, mounted with a limber garter or fillet sewed in form

of a long fleath. Hiove or moitues town die

B.B Gives two views of a new kind of peffary for the prolapfus uteri, being taken from the French and Dutch kind. After the uterus is reduced, the large end of the peffary is to be introduced into the vagina, and the os uteri retained in the concave part, where there are three holes to prevent the stagnation of any moisture. The small end without the os externum has two tapes drawn through the two holes, which are tied to four other tapes, that hang down from a belt that furrounds the woman's body, and by this means keep up the peffary. This fort may be taken out by the patient when she goes to bed, and introduced again in the morning; but as this fometimes rubs the os externum, fo as to make its use uneafy, the round kind marked Care of more general use. They are made of wood, ivory, or cork, (the last covered with cloth and dipr in wax): the peffary is to be lubricated with pomatum, the edge forced through the passage into the vagina, and a finger introduced into the hole in the middle lays it across within the os externum. They ought to be larger or smaller, according to the wideness or narrowness of the passage, to prevent their being forced out by

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the head presents; the blunt hook in Table XXVII. being commonly sufficient, or even the forceps to extract the same, after it is opened with the scissars. Great care ought to be taken, when the sharp crotchet is introduced, to keep the point towards the fatus, especially in cases where the singers cannot be got up to guide the same. The dotted lines along the inside of one of the blades represent a sheath that is contrived to guard the point till it is introduced high enough; the ligature at the handles marked with the two dotted lines is then to be untied, the sheath withdrawn, and the point, being uncovered, is sixed as directed in Table XXXVI.

The point, guarded with this sheath, may also be used instead of the blunt hook.

b Gives a view of the back-part of one of the

crotchets, which is twelve inches long.

e Gives a front-view of the point, to show its length and breadth, which ought to be rather longer and narrower than here represented.

d Represents the scissars proper for perforating the cranium in very narrow and distorted pelvises. They ought to be made very strong, and nine inches at least in length, with stops or rests in the middle of the blades, by which a large dilatation is more easily made.

The above instruments ought only to be used in the most extraordinary cases, where it is not possible to save the woman without their assist-

ance.

Vide

Vide Vol. I. Book III. Chap. 3. Sect. 5. Chap. 5. No 1. Vol. III. Coll. 31, 35.

ADDITIONAL TABLE, Numb. XL.

By the late Dr Thomas Young.

Among the few improvements which have been made in the obstetrical apparatus since the days of Dr Smellie, the most important are the alterations in the forceps, by which the inconveniences formerly attending the use of that instrument are obviated, and the opera-

tion is rendered more fafe and eafy.

In contriving these alterations, the intentions were, 1. That the large curves should correspond as nearly as possible with that of the pelvis. 2. That their points should be thrown forwards, and made round, to prevent their hitching, or even preffing uneafily against any part of the pelvis; and likewife to maintain their hold of the head whilst it is to be brought forwards in that curved line of direction which nature observes. 2. That an inverted curve should be made towards the joints, whereby the perinæum may be faved from injury, the extracting force rightly conducted, and the handles at the same time kept from preffing uneafily on the inferior and anterior parts of the pubes. 4. That their fubstance should be reduced as much as possible, fo that they are not made flexible, or fo thin at the edges as to hurt the part. 5. That their clams

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clams may be made to press equally on the child's head, and spread gradually from the joint, so as not to dilate the os vaginæ too suddenly. 6. That the clams be of a due breadth with the outer surface, a little convex, and extremely smooth, that they may not press uneasily or hurt the woman. 7. That their length be such as can be applied safely and commodiously within the pelvis, and at the same time suit the different sizes of the heads as much as possible.

The instrument, executed according to these intentions, is called the sort curved forceps. It consists of two blades, or parts; each of which is distinguished into the handle A, the joint BC, and the clams DE. See sig. 1. which represents one of the blades before it is bent into its perfect state: aaa, are three holes for admitting screws to fix the wooden handle.—Fig. 2. shows the instrument sinished and locked, in which state it measures about 11 inches; and, when properly made, weighs about 11 ounces troy. The clams must be covered with the best Morocco leather shaved thin, moistened with water, and sewed on with waxed silk.

Fig. 3. Represents a catheter lately preserved by practitioners. It is straight, perforated with 16 holes in sour rows near the point, and terminated by a slight knob. The length is about 5\frac{3}{2} inches.

SECOND ADDITIONAL TABLE,

NUMB. XLI.

By John Evans, M. D. Ofwestry, Shropsbire.

OF late years feveral attempts have been made by different professors in Midwifery towards improving the instruments commonly used in that art, and none feem to have undergone a greater variety of changes than the forceps; and those recommended by the late Profesfor Young of Edinburgh, have evidently the advantage over many of the preceding ones, as being best adapted to the form of the pelvis. But these, as well as the different kinds that have been invented by many celebrated authors in the obstetrical art, are attended with an inconvenience much complained of by those who have had frequent occasion to make use of them; which is that of locking too near the parts of the mother, being often liable to include them (particularly when in the hands of young practitioners), by which the labium pudendi of one fide or other, and fometimes both, have not only been pinched but also torn, and much pain has been the consequence. These inconveniences may be totally obviated by having the forceps made according to the annexed Plate, to lock at a sufficient distance without the os externum; and to prevent too great preffure on the head of the child, a screw is fixed nearly at the extremity of the VOL. I. bandle

handle of the upper blade, which being turned round, projects and pushes the handle of the contrary side, so as to separate the blades to a proper distance; which separation may be increased or diminished according to the necessity of the case. This screw has also the advantage of acting as a wedge, by keeping the handles sirm; it does not enter into, but rests on, the opposite side to that in which it is sixed.

EXPLANATION.

A The points of the blades.

B The centre of ditto, being at this part 3; inches from each other.

C The beginning of the curvature, 2 inches

from D.

D The joint, being 4½ inches from the extremities of the handles at E.

F The screw.

END OF THE FIRST VOLUME.

